

יום המחקר 2014

Abstracts & Publications

תקצירים ופרסומים



**המרכז הרפואי
הלל יפה**

מסגף לסקולטה לרפואה ע"ש רפפורט
המכון חיפה

מדינת ישראל - משרד הבריאות

המרכז הרפואי הלל יפה
יום המחקר

The Hillel Yaffe Medical Center
Research Day

7 בדצמבר 2014 7 December

תקצירים ופרסומים
Abstracts & Publications

ועדה מארגנת: יו"ר: פרופ' אברהם שוטן
חברים: פרופ' מיכאל קראוס,
פרופ' מ יורם פולמן, ד"ר אנה אופיר
הפקה: לשכת הדוברת
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דצמבר 2014
מו"ל: ירקוני פרסום וייעוץ בשיווק

חוקרות וחוקרים, כלל עובדי המרכז הרפואי,

יום המחקר מביא לידי ביטוי חלקים מהפעילות המחקרית והאקדמית הנעשית בבית החולים, והם ביטוי לידע, חוקרנות, יוזמה ויצירתיות של יחידים וקבוצות.

הפעילות האקדמית והמחקרית בבית החולים היא תנאי הכרחי למצוינות מקצועית, להיותנו בחזית הידע והטכנולוגיה, המאפשרים את השגת היעד המרכזי לשמו קיים המרכז הרפואי - מתן טיפול רפואי תוך שמירה על הסטנדרטים המקצועיים הגבוהים ביותר, וחינוך מדעי ורפואי לסטודנטים לרפואה, לרופאים בכל מעד הדרגות והתפקידים, ולכלל העוסקים ברפואה, בסיעוד ובמקצועות הפארא-רפואיים.

אנו מחויבים למצוינות, ומכאן שגם לפיתוח וטיפוח המחקר והפעילות האקדמית. הנהלת בית החולים משקיעה משאבים רבים בטיפוח המחקר, ההוראה והפעילות האקדמית, כך הוקמו ופועלות שתי מעבדות מחקר בסיסי, המעבדה למחקר בסיסי בגניקולוגיה ופריון, והמעבדה למחקר בכירורגיה ניסויית. הוקמה גם ספרייה רפואית מודרנית ומרווחת ברוח המאה ה-21, אודיטוריום ואולמי הרצאות וסמינרים. בנוסף משקיעים אנו משאבים ברבים בפיתוח הידע ועדכון ידע של הצוותים השונים בארץ ובח"ל.

מלוא ההערכה והתודה לכל הלוקחים חלק בפעילות חשובה זו. תודה לצוות ההיגוי בראשותו של פרופ' אבי שוטן על ארגון יום המחקר. בשמי ובשם חברי הנהלת בית החולים הנני מאחל לכולנו המשך הצלחה ועשייה פוריה.

בברכה,



פרופ' מאיר אורן
מנהל המרכז הרפואי

עמיתים יקרים,

יום המחקר הוא הזדמנות של כולנו להציג לצוות בית החולים ולקהילה המדעית והרפואית את העשייה המחקרית הענפה, המתקיימת לאורך השנים בבית החולים.

ספר זה מקבץ בתוכו תקצירים שהגישו המחלקות השונות לקראת יום המחקר, ורשימת הפרסומים המדעיים שלהן בשנים האחרונות. עבודות אלו, פורסמו בכתיב עת בינלאומיים, הוצגו בכנסים בארץ ובעולם, וחלקן אף זכה בפרסים.

אין לנו ספק שלצד העבודה הקלינית החומר המתפרסם הוא עדות לעשייה אקדמית איכותית ופוריה.

אנו תקווה כי תמצאו עניין רב באמור, כמו גם תמשיכו בפעילות מבורכת וחשובה זו, התורמת ללא ספק ערך מוסף וחיוני לעבודתנו.

פרופ' אברהם שוטן - יו"ר
ד"ר אנה אופיר
פרופ' מ יורם פולמן
פרופ' מיכאל קראוס

10:30 **התכנסות**

11:00 **ברכות**

פרופ' אליעזר שלו, דיקן הפקולטה לרפואה
 ע"ש רות וברוך רפפורט הטכניון, חיפה.
 פרופ' מאיר אורן, מנהל המרכז הרפואי הלל יפה.

11:15 **הרצאת אורח: "הכולסטרול הטוב, הרע והמחומצן - הפתרון הוא בפוליפנולים שבפרי הרימון"**

פרופ' מיכאל אבירם, משנה לדיקן הפקולטה ביה"ס לרפואה
 ע"ש רות וברוך רפפורט הטכניון, מנהל מעבדת המחקר לשומנים
 בביה"ס לרפואה ומנהל מעבדת המחקר הקליני המרכז הרפואי
 רמב"ם, חיפה.

11:50 **הצגת תקצירים מצטיינים -**

- **"הינדוס רקמת עצם באמצעות תאי גזע שמקורם בשומן שאוב"**
 פרופ' מ יורם פולמן, אורתופדיית ב'.
- **"שחרור Heparanase מטסיות: מנגנון והשפעה על מערכת הקרישה"**
 ד"ר מענית שפירא, מנהלת אגף המעבדות.
- **"כשאוולטרא סאונד פגש את האנגיוגרם בעורקים הכליליים"**
 פרופ' מ אהרון פרימרמן, מנהל יחידת הצנתורים, מכון הלב.

12:25 **הרצאת אורח: "חדר הניתוח העתידי - ניצני המהפכה כבר כאן"**
 פרופ' דורון קופלמן, מנהל מחלקה כירורגית ב',
 המרכז הרפואי העמק, עפולה.

13:00 **חלוקת פרסים לתקצירים המצטיינים.**

13:15 **סיכום**

פרופ' מאיר אורן, מנהל המרכז הרפואי

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פרסומים

זרקור לעבר - מאמר חותם מאת ד"ר הלל יפה

הבדלים בידע, עמדות ותפיסת מסוגלות עצמית ביחס להתמכרות לתרופות מרשם בין אחיות בית חולים לבין אחיות בריאות הציבור

כבהה וליד – אורתופדיית א'

רקע: התמכרות לתרופות מרשם היא תופעה הולכת וגדלה בשנים האחרונות. אין ספק כי שימוש לא רפואי בתרופות מרשם הינה בעיה חמורה שמעלה את התחלואה והתמותה במדינות רבות בעולם. התמכרות לתרופות מרשם מוגדרת על פי ה-D SM "כדפוס שימוש בתרופה על רקע קשיי הסתגלות או אי הסתגלות שמוביל לחוסר תפקוד בבית, בעבודה, בית ספר גורם לסיכון פיזי. סיבוכים עם גורמי חוק וסדר וגורם לקשיים חברתיים ובין אישיים. מכורים רבים נזקקים לטיפול רפואי במסגרת אשפוז בבתי חולים וכן בקהילה. אחיות מספקות שירותי בריאות מידי יום לאוכלוסייה זו במסגרות הבריאות השונות. על פי מחקרים שנעשו, גישת האחיות לקבוצת מטופלים זו היא שלילית ומושפעת מסטיגמות שונות. מכורים נתקלים ביחס חריג ולא הולם מצד הצוות הסיעודי והרפואי. חוסר הידע והמיומנויות של האחיות השונות במחלקות בתי חולים כלפי מכורים לסמים או להתמכרויות שונות מתואר במאמרים רבים. לא נמצאו מחקרים המבדילים בין אחיות במגזרים שונים כלפי מתמכרים.

מטרת המחקר: לבחון ולהשוות הבדלים בידע וגישות כלפי מתמכרים לתרופות מרשם בין אחיות בריאות הציבור ואחיות בתי החולים.

בעבודה זו בדקנו והשוונו את הידע, העמדות והמסוגלות של אחיות בתי חולים לעומת אחיות בריאות הציבור.

השערות: אחיות בריאות הציבור בעלות ידע מוגבל בנושא התמכרות לתרופות מרשם לעומת אחיות בתי חולים.

אחיות בריאות הציבור בעלות עמדות שליליות לגבי מטופלים מכורים לעומת אחיות בתי חולים. אחיות בריאות הציבור בעלות מסוגלות נמוכה כלפי מטופלים עם התמכרות לתרופות מרשם לעומת אחיות בתי חולים.

כלי המחקר ושיטה: כלי המחקר כלל שאלון סוציו-דמוגרפי ושאלון ידע. עמדות ותפיסת מסוגלות של אחיות בריאות הציבור ובתי חולים כלפי מטופלים עם התמכרות לתרופות מרשם. השאלון נותח באופן סטטיסטי בתוכנת SPSS מבחן T.

שיטה- מחקר חתך שנערך בשנת 2013 בקרב אחיות בית חולים הלל יפה ואחיות בריאות הציבור באזור אשקלון. המדגם כלל 15 אחיות בית חולים ו-15 אחיות בריאות הציבור.

תוצאות: לא נמצא הבדל בין אחיות בתי חולים לבין אחיות בריאות הציבור לפי אף עמדה ברמת מובהקות של 0.005. קיים הבדל בין אחיות בתי חולים לבין אחיות בריאות הציבור לפי אף עמדה ברמת אבחון והדרכה לגבי טיפול במתמכרים.

לא נמצא הבדל בין אחיות בריאות הציבור לאחיות בתי חולים מבחינת תפיסת מסוגלות ברמת מובהקות של 0.005.

המלצות: יש צורך לשפר את יחס המטופלים לקבוצה זו, על ידי תוכניות הדרכה שונות ולימוד הנושא יש לתכנן תוכניות הדרכה, אימון וטיפול באוכלוסייה זו.

KRAS-Mutations in Metastatic Colorectal Cancer and the Effect of Bevacizumab

Katerina Shulman, Ofra Barnett-Griness, Meira Melamed Frank, Leon Raskin, Abraham Kuten, Stephen B. Gruber, Flavio Lejbkowitz, Gad Rennert

Background: Laboratory research of metastatic colorectal cancer subdivided the disease into a number of molecular sub-types mainly based on the status of the KRAS gene. There is an open question of the different biological behavior of a tumor and the treatment effect of Bevacizumab.

Methods: Included were 397 colorectal-cancer patients from the Israeli population-based MECC-Study treated for their first metastatic event with Irinotecan-based or 5-fluorouracil protocols, with or without Bevacizumab, and no surgery of metastases. Patients were diagnosed between 1998-2010 and were followed-up until October 2011. Mutations in KRAS codons 12, and 13 were identified by direct sequencing and SNP assay-by-design. Date of metastases, death and treatment details were extracted from the oncological follow-up records supported by computerized pharmacy records.

Results: A total of 267 cases were treated with Irinotecan-based chemotherapy, 96 (36%) of these in combination with Bevacizumab. A total of 130 cases were treated with 5-Fluorouracil (5FU) treatment, the majority (98%) without Bevacizumab. Mutation in codons 12 or 13 in KRAS was identified in 162 cases (41%), with 16.4%, 10.1% and 7.1% harboring mutations in the codons G12D, G12V and G13D, respectively. 1st-line Irinotecan-based chemotherapy and Bevacizumab showed improved overall survival (OS) in cases with KRAS-WT tumors (HR=0.69;p=0.048), and KRAS - mutated tumors (HR=0.68,p=0.07). This effect was not different across sub-types of KRAS mutation. The assessment of the prognostic effect shows that mutation in the codon 12 or codon 13, G13D (HR=2.4) and G12D (HR=1.8) experienced a worse OS, while G12V (HR=1.3) and all other codon 12 mutations combined (HR=1.2) did not.

Conclusion: Added to 1st line Irinotecan-based chemotherapy, the treatment effect of bevacizumab on OS was not found to have a significant difference between KRAS sub-types of metastatic colorectal cancer. The data supports a prognostic effect of G13D and G12D KRAS mutations.

A Somparison of Two New Technologies for Percutaneous Vertebral Augmentation: Confidence Vertebroplasty vs. Sky Kyphoplasty.

Yoram Folman
Dept. of Orthopaedics B, Hillel Yaffe MC

Background : Cement vertebroplasty has been performed for over a decade to treat painful osteoporotic vertebral compression fractures (OVCFs). Kyphoplasty is considered a further step in the evolution of vertebral augmentation.

Objectives: To evaluate the efficiency and safety of two systems to treat

Ovce: Confidence Vertebroplasty (CV) compared to Sky Kyphoplasty (SK).

Metods: This prospective study included 45 patients with OVCF. Fourteen were treated with CV and 31 with SK. An imaging evaluation using a compression ratio (height of anterior vs. posterior wall) and local kyphotic deformity (Cobb angle) was performed prior to the procedure and 12 months later. Evaluation of pain was carried out using a visual analogue scale.

Results: The mean compression repair was 12% in the CV group compared to 25% in the SK group. Mean kyphotic deformity restoration achieved using CV was 41% compared to 67% using SK. In both groups the pain severity was equally reduced by a mean of 43%.

Conclusion: The SK system is technically superior in restoring the vertebral height and repairing the kyphotic deformity, an advantage that was not manifested in pain relief - the most important variable. Both systems have a high level of safety. The cost-benefit balance clearly favors the CV system.

The Fixion Expandable Stem Hemiarthroplasty for Displaced Femoral Neck Fracture: Technical Features and Pilot Study

Nimrod Ron, Gil Laufer, Yoram Folman
Dept. of Orthopaedics B, Hillel Yaffe MC

Background: Management of displaced femoral neck fracture in elderly patients is challenging due to the patient's high risk profile, poor quality bone stock and muscle weakness.

Materials and methods: Fifty-one patients with displaced (Garden 3–4) intracapsular femoral neck fractures were treated with a newly designed Fixion expandable stem hemiarthroplasty implant and followed thereafter for a minimum of 6 months.

Results: Thirty patients (58.8%) had concomitant diseases graded 3–4 by the ASA scoring system. Two patients (4.8%) incurred deep wound infections that necessitated hardware removal. One case (2.6%) of dislocation was treated by closed reduction. Forty-two patients (82.4%) survived >6 months and cooperated with the study protocol. Mild groin/thigh pain was reported by 11 patients (26.2%). Twenty-six (61.9%) had lost 1–2 out of 4 grades of mobility.

Conclusions: Fixion implant may be considered a further step in the evolution of femoral joint hemiarthroplasty. In the short term, it has proven to be as effective as cemented implant and to be user-friendly for the surgeon. It is also anticipated to be feasible whenever revision is required.

Skin Necrosis After Self-administered Intramuscular Diclofenac.

Ofir Uri, Ehud Arad.

Dept. of Orthopaedics B, Hillel Yaffe MC

Intramuscular diclofenac is used extensively for pain relief in medical practice. Tissue necrosis is a rare but serious complication of intramuscular injections. The pathogenetic mechanism is still not completely understood. A case of tissue necrosis following self-administration of diclofenac inadvertently injected into an arterial perforator branch of the superficial femoral artery is reported, supporting a vascular pathogenesis.

Nucleoplasty is Effective in Reducing Both Mechanical and Radicular Low Back Pain: A Prospective Study in 87 Patients

Yoram Folman

Dept. of Orthopaedics B, Hillel Yaffe MC

Background: Nucleoplasty is a method of increasing popularity in the past few years. It has a role when dealing with pain of spinal origin either radicular or both radicular and mechanical after conservative treatment has failed and before open procedure.

Methods: Eighty-seven patients with a minimal follow-up of 1 year were prospectively followed after they underwent nucleoplasty procedure for either radicular or a combination of radicular and mechanical low back pain. All patients underwent physical examination and completion of visual analog scale score and Oswestry Disability questionnaires after 1, 3, 6, and 12 months. Thirty-nine of them were followed after 2 years.

Results: After 1 month, 66 patients (76%) were satisfied with the results. After 3 months, 60 patients (69%) had significant pain relief, whereas in 27 cases (31%) there was no improvement. After 6 months of follow-up, 57 patients (66%) had pain relief and in 30 cases (34%) there was no effect. At 12 months of follow-up, 55 patients (65%) showed good results and 30 patients (35%) had no effect. In the case of the 39 patients who were followed for 24 months, 23 patients (59%) had significant pain relief. A statistically significant reduction in the Oswestry index was also noted for the series in all intervals. Minor complication occurred in 23 patients (26%) who had transient discomfort and burning pain at the insertion site of the nucleoplasty wire.

Conclusions: We concluded that the nucleoplasty technique is a safe and effective procedure for radicular or combined radicular and mechanical low back pain and should be used in selected cases before open surgery after conservative treatment has failed.

Radiofrequency Treatment has a Beneficial Role in Reducing Low Back Pain due to Facet Syndrome in Octogenarians or Older

Yoram Folman

Dept. of Orthopaedics B, Hillel Yaffe MC

Background: Chronic low back pain is a disabling phenomenon that can cause a severe reduction in quality of life, especially in elderly patients. Surgical treatment is sometimes a big challenge for these elderly patients. Radiofrequency (RF) ablation is an increasingly popular method for treating low back pain caused by facet syndrome. The purpose of this study was to evaluate whether RF neurotomy is effective in terms of pain reduction and functional outcome in elderly patients.

Patients and methods: Fifty-eight patients aged 80 years and older who had chronic mechanical low back pain were examined after they underwent RF heat lesion of the medial branch. Follow-up occurred 1, 3, 6, and 12 months after treatment. Pain was measured on the visual analog scale and functional outcome was measured using the Oswestry Disability Index.

Results: After 1 month, 43 patients (74%) were satisfied with the results. After 3 months, 38 patients (66%) had clinically significant pain relief. After 6 months, 33 patients (57%) had pain relief, and at the 1-year follow-up, 30 patients (52%) showed good results while 28 patients (48%) showed no effect. The Oswestry Disability Index score was substantially improved even after 1 year. Minor complications occurred in eleven patients (19%), who had transient discomfort and burning pain.

Conclusion: RF is a safe and partially effective procedure for treating elderly patients with mechanical back pain due to facet syndrome.

Local Treatment of a Painful Knee with Corticosteroids: The Efficacy of Intra-articular Injection Compared with Peri-articular Soft Tissue Infiltration

Yoram Folman, Nimrod Ron

Dept. of Orthopaedics B, Hillel Yaffe MC

Background: Corticosteroid injections are widely used to palliate the symptoms of knee osteoarthritis. However, no research involving the means of administration has been executed to date. We tested the hypothesis that peri-articular soft tissue infiltration is superior to intra-articular injection as it addresses the target tissue.

Methods: Sixty-three patients with osteoarthritis grade 1–3/4 were randomized to receive intra-articular or peri-articular injection of methylprednisolone acetate [80 mg] and they were followed for three months. The patients were assessed with pain categories adopted from Western Ontario and McMaster Universities (WOMAC) osteoarthritis index.

Results: Both the intra-articular and the peri-articular groups demonstrated improvement in baseline WOMAC osteoarthritis index scores [a median decrease from 56.6 to 24.0 points and from 62.5 to 21.7 points respectively; $P < 0.001$ for both].

Conclusion: Peri-articular infiltration of corticosteroids is an alternative method of local administration in knee grade 1–3/4 osteoarthritis.

Application of Regulated Oxygen-Enriched Negative Pressure-Assisted Wound Therapy in Cervical Necrotizing Fasciitis

Itzhak Braverman MD1, Galit Avior MD1, Narin-Nard Carmel3, Guy Topaz3, Gershon Keren MD4, Moris Topaz MD PhD2

1. Otolaryngology Head and Neck Surgery Unit, the Hillel-Yaffe Medical Center, the Rappaport Faculty of Medicine, Technion, Haifa Israel. 2. Plastic surgery unit, Hillel Yaffe medical center, Hadera, Israel. 3. The Sackler School of Medicine, Tel Aviv, Israel. 4. The Infectious Disease Unit, Hillel Yaffe medical center, Hadera, Israel.

Introduction: Cervical necrotizing fasciitis (CNF) is an aggressive, life-threatening, deep neck infection frequently associated with anaerobic bacterial growth, requiring antibiotic treatment, aggressive surgical intervention and a complimentary hyperbaric treatment (HBO). Regulated negative pressure-assisted wound therapy (RNPT) is a well-established method for wound treatment. However, it is contraindicated in apparent or suspected anaerobic infections due to its inherent mechanism of lowering the wound's atmospheric pO₂. Simultaneous administration of oxygen, together with RNPT, as in oxygen-enriched negative pressure-assisted wound therapy (RO-NPT), was proposed for treatment of anaerobic infections where HBO was not feasible. Objectives: To present the role of RO-NPT in treatment of CNF via a case of potentially fatal CNF

Case presentation: A 68-year-old male patient with previously diagnosed metastatic bladder cancer was admitted complaining of sub-mandibular swelling and painful neck movements. US and CT scan of his neck and chest revealed air collection in the soft tissues. NF was diagnosed and treatment was immediately initiated with broad-spectrum intravenous antibiotics, early wide cervical drainage and switched to RO-NPT administrated under the skin flaps together with frequent, aggressive surgical debridement. Skin flaps were stretched repeatedly by the TopClosure®, to avoid skin flap retraction. Wounds were gradually closed by delayed primary closure, without need for skin grafting.

Conclusion: This case report is one of a series of successful treatment of NF patients by combined IV antibiotics, aggressive surgical debridement, and RO-NPT, substituting for HBO. TopClosure® has assisted primary closure of surgical wounds, alleviating the need for skin grafting, substantially simplifying wound closure and shortening hospital stay. We emphasized the rationale for the clinical use of RO-NPT for treatment and prevention of anaerobic wound infection and as a supplemental mode of treatment in NF.

The Correlation Between Spurling Test and Imaging Studies in Detecting Cervical Radiculopathy

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Background: Cervical spine symptoms are a major cause of visits to general or spinal orthopedic surgeons or even primary care physicians. Although in this era the imaging studies can precisely rule out or diagnose pathologies in the spine, all of these studies have limitations. Computerized tomography (CT) scan consists of radiation exposure to the patients and it should be done with caution. Magnetic resonance imaging (MRI) is a highly effective imaging tool, but in many countries it is still costly. The goal of our study was to determine whether a simple clinical test can help the clinician to identify the patients who need to be sent for these imaging studies.

Methods: Two hundred fifty-seven patients with clinical cervical radiculopathy underwent complete physical examination that also included the Spurling test. After that, all patients were sent to imaging studies of the cervical spine (CT and/or MRI). Correlation between the physical examination using the Spurling test to the imaging studies was done.

Results: Sensitivity of the Spurling test to nerve root pathology was 95% and specificity was 94%.

Conclusion: This paper demonstrate that patients with positive Spurling test have probable nerve root pressure and should be sent for further imaging studies. In patients with negative Spurling test, the possibility of nerve root pressure is less likely.

Clinical Photograph: "A Third Arythenoid?"

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A 15-year-old girl with a foreign body sensation in her throat was referred for examination. No foreign body was observed and her vocal cords showed good movement. Following an endoscopic examination we found a round bulge near the right arythenoid: is this a "third arythenoid?"

CT scan of the neck showed an elongated and curved right side of the hyoid bone, extending to the right arythenoid area. This finding did not disturb the vocal box. Despite the bulge's appearance as a "third arythenoid", it actually was an anatomical variant projection of the hyoid bone into the supraglottic area.

Emergency Airway Obstruction in Newborn due to Congenital Saccular Cyst

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Neonatal airway obstruction during labor is a very rare condition caused by a laryngeal cyst, which to the best of our knowledge has never been described in the relevant literature. Congenital laryngeal cysts are a rare cause of airway obstruction in the neonatal

population. Traditionally, these cysts have been treated surgically by endoscopic excision or marsupialization. However, extension of the cyst beyond the confines of the larynx often occurs¹. Congenital laryngeal cysts are considered to be a result of an obstruction of saccular ducts or to arise from atresia of the sacculle itself²⁻³.

We describe a case of a newborn female who during delivery became cyanotic due to airway obstruction and respiratory distress. A senior aenesthesiologist could not see the larynx during laryngoscopy and was unable to perform intubation. The otolaryngologist and the senior aenesthesiologist aspirated the cystic material during labour in the operation room, and the glottis was viewed for intubation. Further evaluation revealed a large obstructing saccular cyst that was endoscopically removed.

To the best of our knowledge this is the first report of a saccular cyst obstructing airway during labour with emergency aspiration of the cyst prior to intubation.

MRI revealed a large saccular cyst. Endoscopic removal of this congenital saccular cyst was done under general anaesthesia, using a Stoz pediatric laryngoscope. The saccular cyst was viewed and removed by dissection using Starion forceps and sent to histological laboratory. The infant was treated with steroids and antibiotics for a week and the extubation was done.

There was no airway problem and O₂ saturation was kept high. The patient was discharged for follow-up in the ENT clinic. This case is a definite emergency that otolaryngologists, aenesthesiologists and pediatric intensive care physicians should definitely be aware of.

Complication of Tracheostomy: Tracheoinnominate Artery Fistula Bleeding, Controlled by Stent-Grafts: Three Case Reports and Review of the Literature

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Abstract: Delayed massive hemorrhage due to innominate artery erosion is a rare complication following tracheostomy from which few survive. Incidence of tracheo-innominate artery fistula (TIAF) is about 0.7% of all tracheostomies. Even with appropriate management, the mortality rate reaches approximately 75%, and survival carries the risk of significant morbidity (1). The surgical approach is very complex, usually in already debilitated patients consequently with high morbidity and mortality rate (2,3).

Recently Deguchi et al (4) described the successful management of TIAF with an endovascular stent graft repair.

We presented three cases with TIAF that was successfully managed with endovascular stent-graft repair, and we review all the publications dealing with such an approach managing TIAF

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Primary Solitary Intralabyrinthine Schwannomas: Case Series and Review of the Literature

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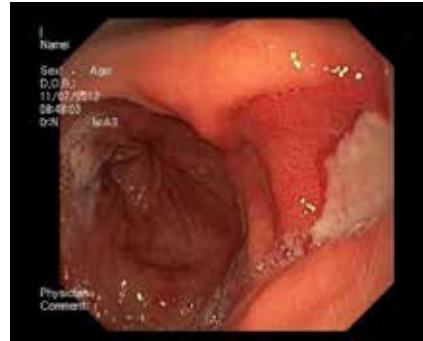
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The Intralabyrinthine Schwannomas (ILS) are uncommon benign tumors, originating from the Schwann cell sheath of the intralabyrinthine distal branches of the vestibulocochlear nerve having no initial component in the internal auditory canal. They might arise inside the cochlea, originate from the vestibule or rarely from semicircular canals and spread from the cochlea into the vestibule, or vice versa, via the anatomic connections between the perilymphatic spaces in the scala vestibuli and the anterior vestibule. The presenting symptoms include progressive or sudden sensorineural hearing loss, occurring in more than 95% of patients, tinnitus and vertigo. MRI characteristics include sharp circumscription and hypointensity on thin heavily T2-weighted 3-D images, with strong enhancement after gadolinium administration on the T1-weighted images. A series of 7 patients with primary ILS Schwannomas that have been diagnosed and followed-up in our institutions during 2006-2013 is presented. The need for comprehensive otoneurological evaluation which encompasses the functional derangement along with the tumor location delineated by MRI imaging is emphasized and treatment options are discussed.

מדפרסיה לצמיחה

ד"ר אורן גל, המכון לגסטרואנטרולוגיה

אשה בת 66 עברה אנדוסקופיה לבריור אנמיה חריפה מחסר ברזל (המוגלובין 6 גרם%). בגסטרוסקופיה נצפה כיב גדול ועמוק באנטרום:



בביופסיות מהכיב – שינויים דלקתיים, ללא עדות לממאירות. החולה טופלה בתכשיר PPI. כמקובל במקרים אלו בוצעה גסטרוסקופיה למעקב ובקורת. כעבור 3 חודשים נצפתה צמיחה של פוליפ היפרפלסטי במיטת הכיב:



כיב קיבה הינו ממצא אשר מחייב מעקב אנדוסקופי וזאת בשל הסיבות האפשריות להתהוותו. האבחנה המבדלת העיקרית היא בין כיב על רקע פפטי – שפיר, או כיב כתוצאה מתהליך ניאופלסטי – ממאיר.

מקרה זה מצטרף למס' מקרים דומים בהם זיהינו פוליפים היפרפלסטיים שצמחו על בסיסם של כיבים במערכת העיכול העליונה. מתצפיות אלו מסתבר כי תהליך ריפוי של כיב קיבה שפיר עשוי לעיתים להיות מלווה במיגרציה של תאי אפיתל ובשגשוג רקמתי המתבטא ביצירת פוליפ היפרפלסטי, אשר צומח מבסיס הכיב. ככל שהכיב גדול יותר (מעל 10 מ"מ) עולה הסבירות להופעת פוליפ (1). לרוב פוליפים היפרפלסטיים בקיבה הינם אסימפטומטיים ואבחנתם נעשית באקראי במפגש אנדוסקופי ראשון עמם. פוליפים היפרפלסטיים נושאים סיכון נמוך להתמרה ממארת. עדות זו של צמיחת פוליפים שפירים על בסיס מחלה כיבית מעלה שאלה באשר לאתיולוגיה להיווצרותם של פוליפים אלה מלכתחילה.

(1) Acquired Hyperplastic Gastric Polyps After Treatment of Ulcer. J Formos Med Assoc. 109(8):567-73,2010.

השפעת תוספת ויטמין D על מחלות מעי דלקתיות כרוניות

ד"ר ברוך עובדיה – המכון לגסטרואנטרולוגיה

רקע: מחלות מעי דלקתיות כרוניות (מחלת קרוהן ודלקת כיבית של המעי) הינן מחלות רב מערכתיות שסיבתן אינה ידועה. ההשערה היא כי מדובר בשילוב בין גורמים גנטיים המשרים נטיה לפתח המחלה לבין חשיפה לגורמים סביבתיים.

ויטמין D הינו ויטמין מסיס שומן בעל חשיבות בתהליכים רבים בגוף: משק עצם וסידן, תגובה לאינסולין, התמיינות תאים, מערכת חיסון ועוד. ידוע כי שפעול קולטן לויטמין D עשוי להשרות סבילות חיסונית ודיכוי של תהליכים מעודדי דלקת. מחסור בויטמין D נפוץ באוכלוסיית העולם כולל בישראל. מחסור זה קשור, לפי עבודות שונות, למגוון רחב של מחלות ביניהן מחלות אוטואימוניות, כדוגמת דלקת פרקים שגרונת וזאבת. אין מידע בספרות לגבי השפעת ויטמין D על מהלך מחלות מעי דלקתיות כרונית – קוליטיס כיבית ומחלת קרוהן.

מטרה: לבדוק השפעת תוספת ויטמין D על מהלך מחלת מעי דלקתית כרונית, במחקר פרוספקטיבי, כפול סמיות, בהסתמך על מדדים קליניים ומעבדתיים.

שיטות: גויסו 39 חולים בגילאים 18-75 (מחציתם חולים בקרוהן ומחציתם בקוליטיס) בחומרה קלה עד בינונית של מחלת מעי דלקתית כרונית, לפי מדד מקובל להערכת פעילות דלקתית (CDAI). החולים חולקו אקראית לשתי תת קבוצות: אינבו, וקבוצת מחקר שקיבלה ויטמין D במינון המקובל לטיפול בחסר, למשך 8 שבועות.

בתחילת המחקר ובשבועות 4 - 8 דורגה חומרת המחלה לפי Truelove and witts scores ו - CDAI SCORE, כמקובל, והנבדקים מלאו שאלון איכות חיים inflammatory bowel disease questionnaire (IBDQ). בוצעו בדיקות מעבדה, כולל רמת ויטמין D ומדדי דלקת.

תוצאות: רמת ויטמין D עלתה משמעותית בקבוצת הטיפול. לא ניצפה שינוי משמעותי במדדי דלקת בשתי הקבוצות. במדדי איכות החיים היה שיפור מובהק בתלונות של כאבי בטן בקבוצת הטיפול (P=0.003). לא ניצפו תופעות לוואי לטיפול.

מסקנות: חולי מחלת מעי דלקתית כרונית חסרים בויטמין D יותר מבאוכלוסיה הרגילה. השלמת ויטמין D חשובה לתיקון החסרים ולמניעת סיבוכים. טיפול קצר טווח בויטמין D לחולים אלה לא הביא להפחתת מדדי הדלקת, אך היה קשור בהפחתת כאבי בטן אצלם.

יש מקום לבדוק השפעת הטיפול בויטמין D על פני משך זמן גדול יותר, באוכלוסיית חולים רחבה יותר.

Sma-Related Pseudomass as A Form of Reverberation Artifact in A 10 Year Old Boy

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Objective: Artifacts are encountered routinely in clinical ultrasonography practice. The majority of them can be interpreted as "by-products" of the physical process of ultrasound image generation. If misinterpreted as such, ultrasound artifacts can lead to serious misdiagnosis. The ability to recognize and eliminate potentially correctable ultrasound artifacts is of great importance to image quality improvement and optimal patient care.

Materials and methods: We describe a case of a 10 year old boy with acute abdominal pain, an unremarkable physical examination and normal blood test. Abdominal sonography was performed, which showed a hyperechoic intraluminal mass in the abdominal aorta between the origin of the superior mesenteric artery (SMA) and the ostia of the renal arteries, closely related to the origin of the SMA. Consequently, a computed tomographic aortogram (CTA) was performed, which effectively ruled out an aortic intraluminal filling defect.

Results: Due to mismatched findings of US versus CTA, this aortic mass eventually proved to be an artifact, probably due to acoustic reverberation, not a thrombus. We present the ultrasonographic and computed tomographic findings and provide relevant discussion thereof.

Discussion and conclusions: The incidence of an aortic thrombus or an intravascular mass in children is extremely rare. The former can be seen as a complication of intra-arterial catheter placement in a neonate and very occasionally in a young patient with structural aortic anomalies, cyanotic heart disease or a prothrombotic state, or secondary to trauma, dehydration or sepsis. Our patient had none of the above.

An echogenic focus within the lumen of the abdominal aorta just distal to the origin of the SMA, specifically in a thin patient without relevant clinical symptoms, should always raise the suspicion of an SMA-related pseudomass—a form of reverberation artifact (or possibly, mirror-image artifact). This artifact is generated when the transducer, SMA and aorta are in alignment. The fat anterior to the SMA is reflected in the aortic lumen, resulting in an intraluminal echogenic artifact. When scanning the aorta outside this plane, no such artifact can be identified. Therefore, the aorta should be scanned in multiple planes, both with and without the SMA, to confirm whether the lesion disappears and can thus be interpreted as a reverberation artifact from the SMA.

Metastatic Carcinoma Occurring in a Gastric Hyperplastic Polyp Mimicking Primary Gastric Cancer: The First Reported Case chronic neck pain and associated headache

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Hyperplastic polyps of the stomach are regarded as benign. However, in rare cases they may contain incipient primary carcinomas. To our knowledge, breast carcinoma metastatic to a gastric hyperplastic polyp has not yet been reported. We describe the case of a 69-year-old woman to whom a gastric polyp was endoscopically excised. The patient had previously undergone a right mastectomy for mixed, invasive ductal and lobular carcinoma 5 years earlier. Histological sections from the gastric lesion showed typical features of hyperplastic polyp with foci of poorly differentiated adenocarcinoma including signet ring cells infiltrating the lamina propria. The histologic findings were consistent with a primary gastric cancer. However, the carcinoma cells were immunopositive for estrogen and progesterone receptors and GATA3 and negative for CDX2, Hep Par 1, and MUC5AC. E-cadherin showed membranous reactivity in some of the carcinoma cells while in others it was negative. Accordingly, metastatic mixed, lobular and ductal breast carcinoma was diagnosed. We conclude that metastatic adenocarcinoma mimicking primary gastric cancer can be rarely encountered in hyperplastic gastric polyps.

Case presentation

A 69-year-old woman with a five-year history of mixed ductal and lobular breast cancer was found to have a polypoid gastric mass on a CT scan and was sent to a gastroscopy.



Discussion

The occurrence of hyperplastic gastric polyp harboring metastatic carcinoma has not been reported yet. This case involved the extremely rare association of a gastric hyperplastic polyp and focal metastatic breast carcinoma. Histologically, the case could have been diagnosed as primary gastric carcinoma arising in a hyperplastic polyp.

In summary, to our knowledge this is the first report of carcinoma metastasizing to a hyperplastic gastric polyp. It emphasizes the importance of obtaining a detailed patient history and performing immunohistochemical stains in relevant cases to prevent misdiagnosis and an unnecessary surgical procedure.

The Role of Plain Abdominal Radiographs in the Evaluation of Patients with Non-traumatic Abdominal Pain

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Background: Plain abdominal radiographs are performed routinely as the first imaging examination in the emergency department in evaluating abdominal pain. However, the diagnostic value is questionable and very often there is no clear indication.

Purpose: To determine the utility of abdominal radiography for non-trauma emergency patients with acute abdominal pain.

Materials and Methods: Records of 573 consecutive patients presenting to the emergency department with acute abdominal pain over a period of 6 months were retrospectively reviewed. A total of 300 patients underwent abdominal radiography. Only the first radiograph per patient was used for analysis. Only patients admitted to the hospital were included in the study. The report interpretations of the abdominal radiographs were categorized as normal, nonspecific, or abnormal. The patients' medical records were also reviewed to determine whether further imaging was performed (computed tomography, ultrasonography) and results were compared with abdominal radiography. Chart reviews were conducted to identify patients in whom abdominal radiography alone influenced treatment.

Results: Of 300 patients, interpretation of abdominal radiography was normal in 88% ($n=264$), nonspecific in 7.3% ($n=22$), and abnormal in 4.7% ($n=14$). Further imaging was performed for 55% (164) of all patients. Of 264 patients whose abdominal radiography results were normal, 57% ($n=150$) had follow-up imaging; 65% (98 of 150) of these showed abnormal findings. This number increased to 67% (6 of 9) and 100% (5 of 5) for nonspecific and abnormal abdominal radiography results, respectively. In 11 (3.7%) of 300 patients, abdominal radiography possibly influenced patient treatment without any further radiologic examination.

Conclusion: Based on our study results, the diagnostic yield of plain abdominal radiography in adult patients with abdominal pain in the emergency department setting is low. Therefore, abdominal radiography should not be used indiscriminately as a routine examination in any patient presenting with abdominal symptoms.

Is Interval Appendectomy Necessary Following Conservative Treatment of Periappendicular Mass? Sonography Evidence

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Background: Currently accepted management of periappendicular mass consists of treatment with antibiotics followed by interval appendectomy. However, debate has intensified over the necessity of elective appendectomy. The purpose of this study was to perform ultrasound assessments of patients treated conservatively for periappendicular mass to examine remaining or secondary pathology.

Methods: We invited for ultrasound examination all patients who were treated for periappendicular mass, exclusively with antibiotics, without drainage or surgery, at our medical center during the years 2003 to 2012. Scans of the right lower quadrant were performed in transverse and longitudinal planes, in the recumbent and left lateral decubitus patient positions. Anatomic landmarks such as the right colon, cecum, ileocecal valve, terminal ileum and appendix were demonstrated. The right kidney was scanned to exclude hydronephrosis, and the pelvis for the presence of free fluid. Color Doppler was used on the appendix and terminal ileum to detect any hyperemia.

Results: Of the 1667 patients hospitalized with acute appendicitis during the study period, 72 (4.3%) had periappendicular mass and were treated with antibiotics only. Four underwent emergency surgery due to recurrence: 3 within 6 months and one at 10 months after discharge. Interval appendectomy was performed in 39 patients. Of the remaining, 22 underwent sonography at a mean of 34 months, range 6 -105 months, after the original infection. Their mean age was 53 years, range: 5-86 years; 13 were males. Thickened appendices were detected in 2 patients. No other pathologies were detected in the ultrasound examination. Peritoneal fluid was not present and right kidneys were normal. All reported not having any symptoms since their hospital discharge.

Conclusion: Normal sonographic examinations following conservative treatment for periappendicular mass confirmed that elective surgery was not necessary. Recurrence seems unlikely after a period of 6 months following treatment.

טיפול ב"חי-המת": חוויית אנשי-צוות סיעודי במפגש עם מטופל שנמצא במצב של מוות מוחי ובישור הבשורה המרה לבני משפחתו

מלי בן אדיבה, M.A, R.N, מרכז רפואי הלל יפה
הדס גולדבלט, PhD, החוג לסייעוד, אוניברסיטת חיפה

בישור בשורה על מוות מוחי של מטופל הוא אחד המפגשים המורכבים והמשמעותיים למקבלי הבשורה ולאנשי-צוות מטפלים כאחד. המראה המתעתע של המטופל, אי-הבהירות והקושי בקבלת המוות, עלולים לעורר אצל אנשי-הצוות מגוון תגובות רגשיות, קוגניטיביות והתנהגויות בעלות השלכות על עולמם המקצועי והאישי.

מטרת המחקר: ללמוד על חווייתיהם של אנשי-צוות סיעודי בטיפול נמרץ במפגש טעון ומאתגר זה. **השיטה:** מחקר איכותני שכלל ראיונות עומק חצי-מובנים עם 15 אנשי צוות סיעודי מיחידות לטיפול נמרץ בשני בתי-חולים בצפון הארץ. הראיונות הוקלטו, תומללו ונותחו באמצעות ניתוח תוכן.

ממצאים: מניתוח הנתונים התגלו ארבע תמות: (1) הקשיים שחווים אנשי הצוות במפגש עם המוות המוחי (הקשורים לעמימות המצב, לאחריות לזהותו בזמן, ולדילמות אתיות); (2) קשיים בהתנהלות אנשי הצוות מול בני משפחת המטופל; (3) השלכות המפגש עם מטופל במצב של מוות מוחי על חייהם המקצועיים והאישיים של אנשי הצוות, ו- (4) דרכי ההתמודדות של אנשי-הצוות עם הקשיים שלעיל.

דיון: העמימות והפרדוקס שבמוות המוחי מהווים את ליבת הקושי במפגש הטיפולי. חוסר בהירות וחוסר זהות של האדם הנמצא במצב ביניים - "מצב לימינאלי" לצד ה"נוכחות-נפקדות" של המטופל, מעוררים תחושות בלבול, אמביוולנטיות ושיבוש העולם המקצועי המסודר. בטיפולם, נעו אנשי-הצוות בין שני קטבים: ניתוק רגשי מהמטופל ובני משפחתו, תוך עשייה טכנית, מול הפגנת הזדהות רגשית וניסיון להתקרב אליהם. הם תמרנו בין שני מרחבים - מרחב העבודה והתקשורת בינם ובין עצמם, ומרחב הקשר עם בני המשפחה. מרביתם חשו שאינם מיומנים דיים לנהל ביעילות תהליכים אלו. **השלכות לפרקטיקה:** ממצאי המחקר מדגישים את הצורך בהכשרה מקיפה לאנשי-הצוות הסיעודי, שתעסוק בפיתוח אסטרטגיות להתמודדות אישית וארגונית ובפיתוח מיומנויות תקשורת עם בני משפחת המטופל, העומדים בפני קבלת החלטה על תרומת איבריו.

Accuracy of Ultrasonographic Diagnosis of Acute Appendicitis in Pregnant Women

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Objective: Acute appendicitis is the most frequently suspected acute abdominal disorder in the Emergency Department and the most common indication for emergency abdominal surgery. Clinical evaluation of acute appendicitis is difficult in pregnant patients. Ultrasonography remains the initial imaging study of choice in the evaluation of the pregnant woman with an acute abdomen. The purpose of our study was to assess the reliability and value of the sonographic examinations in the diagnosis of acute appendicitis in pregnant women.

Materials and methods: We obtained sonographic examinations performed on 68 pregnant women with suspected acute appendicitis retrospectively for 16 months (Sep. 2008 – Feb. 2010). Study subjects' average age was 27.3, with an average gestational age of 26 weeks. Sonography was the first imaging modality employed. Surgery or clinical follow-up was the gold standard for the evaluation of sonographic performance. All examinations were performed using gray-scale graded compression in the left lateral decubitus position for detecting an enlarged appendix. The sonographic criteria for acute appendicitis were detection of a noncompressible, blind-ended, tubular, multilayered structure measuring greater than 6 mm in maximal diameter. Additional relevant findings, such as the presence of enlarged regional lymphatic nodes, free fluid, cecal wall edema and highly echogenic mesenteric fat, were variably detected.

Results: 4 patients had positive sonographic findings of acute appendicitis (5.9%). Sonographic findings were correlated with surgical findings and clinical follow-up. The diagnosis was confirmed in all 4 patients (100%). In the 64 patients with negative sonographic findings of acute appendicitis, the result for 1 patient (1.6%) proved false-negative, whereas the remaining 63 (98.4%) improved on clinical follow-up. Accordingly, sensitivity was 80.0%, specificity was 100% and overall accuracy was 98.5%. Moreover, in 4 out of the 64 patients with negative sonographic findings for acute appendicitis, a different pathologic finding such as acute pyelonephritis was identified. We present the correlation of all the sonographic signs in the form of comparative charts.

Conclusions: Our experience suggests that gray-scale graded compression ultrasonography in the left lateral decubitus position, in addition to color Doppler imaging, is a highly accurate method for the diagnosis of acute appendicitis in pregnant women and should be performed as the first imaging test. We present the optimal study protocol, which allows not only to selectively examine the right lower quadrant of the abdomen, but to diagnose other common pathologic conditions in pregnant women as well.

Differences in MCT1 A1470T Polymorphism Prevalence Between Runners and Swimmers

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Background: Skeletal muscle is the major producer and user of lactate in the body. Therefore, transport of lactate across cells membrane is of considerable importance. Lactate transport is mediated by proton-linked monocarboxylate transporter (MCT1). The A1470T polymorphism (rs1049434) in MCT1 gene influences lactate transport, with T-allele associated with reduction of lactate transport rate and elevation in blood lactate levels.

The aim of the current study was to compare allelic and genotype frequencies of MCT1 A1470T polymorphism among Israeli track-and-field athletes, swimmers and non-athletes.

Methods: Genomic DNA was extracted from 173 track-and-field athletes (age 17-50), 80 swimmers (age 16-49), and 128 non-athletes (age 19-29). Track-and-field athletes were assigned to three subgroups: long-distance runners, middle-distance runners, and power-event athletes. Swimmers were assigned to two subgroups: long-distance swimmers and short-distance swimmers. Genotyping was performed using polymerase chain reaction (PCR).

Results: T-allele frequency was significantly higher among long-distance swimmers (45%) compared to long- and middle-distance runners (27% and 30%, respectively; $p < 0.01$). In addition, T-allele frequency was significantly higher among short-distance swimmers (40%) compared to power-event athletes (25%, $p < 0.01$). Overall, T-allele frequency was significantly higher among swimmers (42%) compared to runners (27%, $p < 0.001$).

More research is needed to clarify whether this polymorphism displays advantage for swimming performance.

Conclusions: The rationale of the current study was to explore the association of the MCT1 A1470T polymorphism (which relates to lactate kinetics) with athletic performance among runners and swimmers. We found that the MCT1 T allele, which is associated with reduction of lactate transport rate in red blood cells, and lower post-exercise blood lactate levels is more frequent among swimmers compared with runners. More research is needed in order to clarify whether swimmers better tolerate the decreased lactate transport due to the aquatic environment or that this polymorphism displays some advantage for swimming performance.

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Prognostic Significance of 2-Dimensional, M-mode, and Doppler Echo Indices of Right Ventricular Function in Children with Pulmonary Arterial Hypertension

Background: Right ventricular (RV) function may be a key determinant of mortality in pediatric idiopathic pulmonary artery hypertension, (iPAH) and that associated with congenital heart disease (cPAH) but echo indices of RV function have not been adequately studied.

Methods: Children (0-18 yr) with iPAH and cPAH were retrospectively studied. RV function indices (indexed RV end diastolic area, fractional area change, tricuspid annular excursion, right atrial volume) were analyzed at diagnosis and at last follow up. Indices were compared between iPAH and cPAH pts at baseline and follow up. iPAH pts alive (group 1) were compared with those dead/ transplanted (group 2) at time of study. Cut points predictive of survival were generated (ROC) and Kaplan Meier survival analyzed.

Results: 54 pts (36 cPAH (7.5±5.9 yrs; M:F 12:24); 18 iPAH (8.9±5.7 yrs; M:F 7:11; group 1 n=12, group 2 n=6) were studied. Median follow up was 4.3 (0.2-7.4) yrs. Despite similar PVRi, RV function was significantly decreased in iPAH vs cPAH pts during follow up. Group 1 iPAH maintained RV function on follow up, while it worsened in group 2. In iPAH survival was significantly different based on RV function cutpoints.

Conclusion: Conventional echo RV function indices including RV end diastolic area, fractional area of change and tricuspid annular excursion appear to be useful for prognosis in children with PAH.

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Incidence and Risk Factors for Intussusception Among Children in Northern Israel from 1992 to 2009, Prior to Universal Rotavirus Immunization

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Objectives: Determining the background incidence of intussusception is important in countries considering implementing rotavirus immunization in order to assess the safety of these vaccines. Rotavirus immunization was introduced into the routine infant immunization program during late 2010 in Israel. Herein the incidence of intussusception was estimated in Israeli children less than five years of age between 1 January 1992 and 31 December 2009, and possible risk factors were examined.

Design: Demographic and clinical data were collected from medical records of children who were hospitalized due to intussusception (N=190), and from matched control children (N=295) who were hospitalized for other reasons, at Carmel and Hillel Yaffe hospitals in northern Israel, during the period prior to universal rotavirus vaccination of infants in Israel.

Results: The average annual incidence of intussusception in Jewish and Arab children less than five years of age was estimated at 36.1 (95% CI 17.0-76.5) and 23.2 per 100,000 (95% CI 9.3-57.9), respectively; for infants less than 12 months of age - 128.1 (95% CI 53.0-309.6) and 80.1 (95% CI 29.1-242.6) per 100,000, respectively. The risk of intussusception was higher in infants aged 3-5 months (adjusted OR 5.30 (95% CI 2.11-13.31) and 6-11 months (adjusted OR 2.53 (95% CI 1.13-5.62) when compared to infants less than 3 months of age; in those living in low socioeconomic settings (adjusted OR 2.81 95% CI 1.45-5.43) vs children from high socioeconomic communities, and in children with recent gastroenteritis (adjusted OR 19.90 (95% 2.35-168.32) vs children without recent gastroenteritis). Surgical reduction was required in 23.2%. The likelihood of surgery was significantly increased in patients presenting with bloody (currant jelly) stool, in Arab patients and in those who were admitted to Hillel Yaffe Hospital.

Conclusions: The incidence of intussusception prior to universal rotavirus immunization was documented in northern Israel. Despite the lower incidence, Arab patients underwent surgery more often, suggesting delayed hospital admission of Arab as opposed to Jewish patients.

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Incidence and Characteristics of Sporadic Norovirus Gastroenteritis Associated with Hospitalization of Children Less than 5 Years of Age in Israel

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Equal contribution

Background: We examined the incidence and characteristics of sporadic norovirus gastroenteritis (NoVGE) associated with hospitalizations in children < 5 years of age, and norovirus genotypes causing such morbidity.

Methods: We performed a prospective study between November 2007 and December 2010 on acute gastroenteritis (AGE) in 3 hospitals in Northern Israel. Stools from 604 children with AGE were tested for the presence of genogroup II noroviruses by real time polymerase chain reaction. Demographic data were compared between cases of NoVGE with hospital controls without AGE.

Results: Norovirus was detected in 108 children (17.9% 95% CI 15.0-21.1). 89.9% were ≤ 23 months old. Most patients (78.1%) had ≥ 5 watery stools/day, 82.9% vomited, and 64.8% had fever ≥38°C. Dehydration occurred in 38.9% and 72.2% were given intravenous fluids. The risk of NoVGE increased non-linearly with age. The estimated NoVGE incidence rate was 2.8 (95% CI 2.2-3.6) and 3.3 (95% CI 2.5-4.3) per 1000 children < 5 years, leading to 2081 to 2516 NoVGE hospitalizations in 2008 and 2010, respectively. Overall genotypes GII.3 (40.7%), GII.4b, (21.2%), and GII.4a (18.5%) predominated, although relative distribution differed between 2008 and 2010.

Conclusions: NoVGE was the second leading cause of hospitalizations for severe AGE in children < 5 years of age in Israel, and was associated with high burden to health care system. Children 6 to 23 months old were at increased risk for NoVGE. Determining NoVGE incidence and the circulating genotypes provides a basis for developing and evaluating the need of norovirus vaccine.

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Satisfaction Questionnaire in a Neonatal Intensive Care Unit: Our 5 Years' Experience

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Objective: To compile and analyze the replies to questionnaires on patient satisfaction as a major parameter of quality assessment in the setting of a single neonatal intensive care unit (NICU) over a 5-year period.

Methods: The NICU of Hillel Yaffe Medical Center (Hadera, Israel) has utilized the ISO 9001:2008 standard for quality management system since 2007. The responses of the neonates' parents to a satisfaction questionnaire throughout a 5-year period were retrieved and analyzed.

Results: The responses to a total of 1223 satisfaction questionnaire were available for analysis. Most of the parents were satisfied with the service, and some of them suggested improvements in features whose shortcomings were unknown to us and could easily be remedied for the most part.

Conclusions: The replies to the questionnaire identified components of care that parents found to be satisfactory and others that they wished could be changed. A satisfaction questionnaire is an easy tool for the improvement of service, and the use of the one we constructed and describe is recommended to guide the enhancement of quality medical care in an NICU.

A Novel Host-Immune Protein Signature for Diagnosing Bacterial Infections and Guiding Antibiotic Treatment

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Bacterial and viral infections are often clinically indistinguishable, leading to inappropriate patient management and antibiotic misuse. Traditional host-proteins such as procalcitonin, C-reactive protein, and interleukin-6 can help determine infection etiology, but their performance is negatively affected by inter-patient variability. Our goal was to develop and validate a host-immune signature that measures both novel and traditional viral- and bacterial-induced proteins, and computationally combines them into a predictive score that distinguishes between bacterial and viral etiologies.

Methods: We prospectively recruited 1002 hospitalized and emergency department patients with acute infection, and controls with no apparent infection. Patients underwent comprehensive clinical and laboratory assessment, and the final diagnosis was determined by a panel of three independent experts. We quantitatively screened 600 circulating host-proteins and developed a multi-parametric signature using logistic-regression on half of the patients, and validated it on the remaining half.

Results: The cohort included 319 bacterial, 334 viral, 112 control and 98 indeterminate patients (139 were excluded). The best performing signature had an area under the curve (AUC) of 0.94 ± 0.02 . It consisted of the following novel viral-induced and traditional bacterial-induced soluble proteins: TNF-related apoptosis-inducing ligand, Interferon gamma-induced protein-10, and C-reactive protein. The signature was superior to any of the individual proteins ($P < 0.001$), as well as routinely used clinical parameters and their combinations ($P < 0.001$). The signature was robust across different physiological systems (respiratory, urinary and systemic), times from symptom onset (0-12 days), and pathogens (56 species), with AUCs between 0.87 and 1.0.

Conclusions: The present host-signature based assay provides valuable information over routinely used clinical variables and is readily usable on blood samples drawn as part of routine care. It has the potential to improve the management of patients with acute infections and reduce antibiotic misuse.

Postnatal Follow-Up of Newborns with Prenatal Diagnosis of Isolated Hydronephrosis

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Objectives: To examine the correlation between the degree of renal pelvic dilatation (RPD), as well as the presence of bilateral dilatation detected within the first 2-5 days of life and the postnatal outcome and to consider decreasing the number of unnecessary postnatal imaging examinations.

Methods: All term newborns with antenatal hydronephrosis who were born in our institution between 1/1/2011 and 12/31/2012 were recruited. These babies underwent one ultrasound evaluation at age 2-5 days and a second one at age 4-6 weeks, after which they were referred to our nephrologist.

Results: Out of 8370 live-births, 143 infants demonstrated antenatal hydronephrosis on ultrasound studies. Six babies never completed the exam because the parents refused to remain hospitalized after giving birth. The first ultrasound was normal in 69, while 62 had mild, 3 had moderate and 3 had severe RPD. The second ultrasound was normal in 76 babies, while 36 had mild, 8 had moderate and 12 had severe RPD. Of those 132 babies completed both examinations, the first ultrasound detected bilateral hydronephrosis in 33 and the second ultrasound detected bilateral hydronephrosis in 27. Nine of the 11 infants with ureteropelvic junction obstruction had severe RPD. Ten babies had vesicoureteral reflux and only six needed surgical intervention.

Conclusion: An ultrasound that was performed within the first 2-5 days of life cannot be used as an accurate predictor of the need for further investigation. However our results can be useful for parental counseling.

Paracetamol Treatment of Patent Ductus Arteriosus in Preterm Infants

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Objective: To determine the effectiveness of paracetamol in closing patent ductus arteriosus (PDA) in preterm infants of our population.

Study design: Infants with symptomatic PDA who failed or could not get ibuprofen treatment, and who were candidates for surgical ligation, were administered oral paracetamol 15 mg kg⁻¹ every 6h, for up to 7 days and were monitored for clinical, echocardiographic and laboratorial courses.

Result: Seven infants, between 24-27 weeks' gestation, were included. In four the DA was closed while treated by paracetamol-in one of them the DA reopened, treated with paracetamol again, and closed. In one infant, the DA almost closed, symptoms disappeared, and the DA subsequently closed spontaneously later. Two needed surgical ligation. There were no hematologic or biochemical abnormalities.

Conclusion: Although there is the possibility that PDA may have closed spontaneously, it is proposed that paracetamol could contribute to the closure of PDA in preterm infants.

Effect of Teleradiology upon Pattern of Transfer of Head Injured Patients from a Rural General Hospital to a Neurosurgical Referral Center: Follow-up study

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Introduction: The objective of this study was to assess the effect of neurosurgical consultation via teleradiology on the need to transfer victims of head injury requiring hospitalization but referred initially to a rural level II trauma center without a neurosurgical facility. Preliminary results were published following a two-year trial period, 2003–2005, after teleradiology became available. The aim of this current study was to retrospectively evaluate the long term impact of this system.

Methods: Patients admitted for head injury during 2006-2011, were analyzed and compared to patients admitted during 2003-2005 after teleradiology became available. Late transfer of patients initially hospitalized in the level 2 trauma center was evaluated for treatment failure.

Results: 1028 patients were treated throughout the two periods. After neurosurgical consultation via teleradiology became available a shift towards fewer immediate transfers over time was evident, from 60.3% to 31.4%. However, the number of late transfers increased from 2.4% to 8.5% in the second period. Evaluation of the late transfers revealed that only 23 (4.1%) represent real treatment failures due to either clinical deterioration or radiological deterioration. The clinical course was altered by primary intent to hospitalize the patients in the level II trauma center in only one patient.

Conclusions: Selected head trauma patients who have a pathological CT scan may be safely managed in level II trauma centers following neurosurgical consultation using teleradiology.

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Maternal Non-compliance in a Well-baby Nursery: Family Characteristics and Other Reasons

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Objective: Neonatal recommendations include medical follow-up, metabolic screening, vitamin K, eye drops/ointment, and vaccinations. Most but not all parents follow these recommendations. This study aimed to characterize the non-compliant mothers in order to understand the reasons behind that non-compliance.

Study design: All mothers who refused any routine treatment of their infant or who asked for early discharge of their infant were included. They filled-in a questionnaire on socioeconomic items, previous births and those children's health status, current pregnancy and delivery, and their beliefs.

Result: Three non-compliant subgroups emerged according to the responses: Muslim mothers requesting early discharge to care for children at home, Jewish mothers requesting early discharge because they disliked hospital environment, Sabbath/holiday, and children at home, and Jewish mothers who rejected guidelines because they believed the treatments were unnecessary or possibly harmful to their infants.

Conclusion: Socio-economic factors could influence maternal compliance in a well baby nursery. Several interventions to enhance maternal compliance to medical recommendations are proposed.

כריתה זעיר-פולשנית (MIP) של אדנומה בודדת של בלוטת יותרת-התריס תחת הרדמה מקומית לטיפול ביתר פעילות של בלוטת יותרת-התריס (PHPT) הנגרמת על ידי אדנומה

מיכאל קראוס, עורווא יונס, אחמד מחאמיד, מירי בידר, ריקרדו אלפיסי.
המערך לכירורגיה כללית במרכז הרפואי "הלל יפה" בחדרה, והטכניון בחיפה

הקדמה: כריתה זעיר פולשנית של בלוטת יותרת התריס (MINIMALLY INVASIVE PARATHYROIDECTOMY) היא כיום ניתוח הבחירה לטיפול ביתר פעילות של בלוטת יותרת התריס (PRIMARY HYPERPARATHYROIDISM) הנגרם ע"י אדנומה. במחקר זה מתואר ניסיונו בביצוע MIP תחת הרדמה מקומית.

מטרות: א. תאור שיטת ביצוע MIP תחת הרדמה מקומית. ב. ההוריות לביצוע הניתוח. ג. תאור תוצאות ניתוח MIP שבוצע בהרדמה מקומית, בטיחותו ושייכות הסיבוכים בעקבותיו.
שיטת המחקר: הניתוח בוצע בשיטה זעיר פולשנית (MIP) ב-454 (91.5%) מתוך 496 חולים. עם אדנומה. מתוך קבוצה זו עברו 170 (37.4%) חולים את ניתוח MIP בהרדמה מקומית. ניתוח MIP בוצע בחולים שמצבם הבריאותי דרש הרדמה מקומית, או שהביעו את רצונם לביצוע הניתוח בשיטה זו. **תוצאות:** ביצוע MIP בהרדמה מקומית הביא לריפוי של 162 (95.3%) מתוך 170 חולים, ב-8 חולים היה צורך בהיפוך (CONVERSION) להרדמה כללית, וב-3 מהם (1.8%) לא אותרה האדנומה גם בהרדמה כללית. הסיבוכים שנצפו בעקבות הניתוח היו צרידות זמנית ב-15 (8.2%) חולים, היפוקלצמיה זמנית ב-20 (11.8%) חולים וזיהום מקומי בעור ב-3 חולים. באף חולה לא היתה היפוקלצמיה או צרידות קבועה. **מסקנות:** ניתוח MIP בהרדמה מקומית הוא בטוח, השיג ריפוי ב-95.3% מהחולים, ובתוספת של הרדמה כללית השיג ריפוי של 88.2% מהחולים, עם שכיחות נמוכה של סיבוכים.

דיון: ביצוע MIP בהרדמה מקומית לא נכנס עדין לשימוש נרחב בעולם ובארצנו. תוצאות עבודה זו תומכות בביצוע MIP בהרדמה מקומית, כאשר יש הוראה רפואית לביצועו, או לפי העדפת החולה.
סיכום: כריתה אדנומה הגורמת ליתר פעילות של בלוטת יותרת התריס (PHPT) בשיטה זעיר פולשנית (MIP) בהרדמה מקומית, היא בטוחה, מצליחה באחוז גבוה של המנותחים, ומלווה בשכיחות נמוכה של סיבוכים כאשר היא מבוצעת ע"י מנתחים מיומנים בביצועה.

Routine Prophylactic Level vi (central compartment) Lymph Node Dissection in Papillary Thyroid Carcinoma

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Objective: To evaluate a single institution's experience with prophylactic level VI lymphnode dissection in patients suffering from papillary thyroid carcinoma.

Design: Retrospective chart review. Patients undergoing therapeutic dissections and no dissections served as control.

Main Outcome: Of 30 patients who underwent prophylactic level VI lymphnode dissections, 11 (37%) patients were found to harbor metastasis. This led to an increase in the dose of radioiodine in 6 patients. In half of the patients, post-treatment whole body scans did not reveal residual disease in the neck. Postoperatively, permanent hypoparathyroidism developed in 4 (13%) of 30 and 3 (30%) of 10 patients undergoing prophylactic and therapeutic level VI lymphnode dissection respectively. Age, tumor size and multicentricity did not differentiate between patients with and without occult lymphnode metastasis.

Conclusions: Surgery alone may eradicate disease in the neck in a substantial percentage of patients. However, higher morbidity is of concern. Long term prospective studies are needed to know whether the added morbidity is real and whether any added benefit upon existing adjuvant therapy justifies this approach.

Is Routine Brain CT Scan, Performed for Early Follow-up in Head Trauma Patients with GCS 14-15, Always Justified?

Kessel B, Ashkenazi I, Zeina AR, Nachtigal A, Korin A, Khashan T, Alfici R.

Hypothesis: Routine repeat head computed tomography (CT) for patients with traumatic head injury, initially presenting with GCS of 14-15, does not change therapeutic policy in these trauma patients.

Methods: This was a retrospective cohort study of trauma patients with Glasgow Coma Scale (GCS) of 14-15 on admission, suffering from different types of intracranial bleeding who were admitted for observation in a level II trauma center. The size of hematoma on initial head CT was measured and compared to findings of repeat CT performed following 12 hours. Patients were evaluated as to changes in neurologic status and treatment.

Results: 68 patients treated over a period of 5 years were evaluated. Forty two (61.8%) were male and 24 (38.2%) were female. Mean age was 56.2 years and mean ISS score was 12.6±5.1. Initial GCS was 15 in 51 patients and 14 in 15 other patients. CT scan revealed 7 epidural hematomas, 20 subdural hematomas, twenty eight intraparenchymal bleeding, and 13 subarchnoid hemorrhages. Repeat CT revealed an increase in size of the hematoma in 8 patients. None of these patients suffered from clinical deterioration. Repeat CT in 12 patients whose GCS deteriorated, did not show any significant changes on the repeat CT scan. None of the patients underwent intervention after a routine repeat CT.

Conclusions: Routine repeat CT scan of head, performed 12 hours after the initial scan did not change the therapeutic policy in GCS 14-15 head trauma patients. The need for mandatory CT of head in mild traumatic brain injury should be questioned.

The Effect of Heparanase on Endotoxemia Induced Acute Lung Injury in Rats

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Introduction: Heparanase is an endo-β-D-glucuronidase capable of cleaving heparan sulfate (HS) side chains at a limited number of sites. HS proteoglycans (HSPGs) are abundant components of the extra cellular matrix (ECM). We have previously demonstrated that pre-treatment with heparanase attenuated acute lung injury induced sepsis, and significantly improved the survival of affected animals. The present study aims were to examine whether post-treatment of lung injury with heparanase will decrease neutrophil accumulation in the septic lung and will result in decreased permeability of the pulmonary endothelium and decreased levels of adhesion molecules.

Methods: Rats were treated with increasing doses of intra-peritoneal lipopolysaccharide (LPS) Escherichia coli O111:B4. After induction of sepsis -for one hour-, heparanase was injected at several doses (62.5, 125 and 250 µg/kg) via the tail vein. Leukocytes numbers and CD11b, CD18, CD29 integrins expression were measured by flow cytometry. Leukocytes and protein levels in lung tissue and bronchoalveolar lavage fluid (BALF) were determined for myeloperoxidase (MPO) levels, histology and neutrophils counts.

Results: Mortality rate after 24 hours in the SHAM group was 0% (n=8), in the heparanase groups were 0% (n=24), in the LPS groups were 12.5% (n=24) and in the LPS+heparanase groups were 12.5% (n=64). Heparanase treatment was followed by increased lung neutrophils counts in healthy rats (13.7±3.1 compared to 7±1.2, p=0.001). MPO activity in the treated groups was 0.37 OD/min/mg±0.07 compared to 0.14 OD/min/mg ±0.02 (p=0.0006) in the untreated rats. The expression of CD11b, CD18, CD29 integrins on leukocytes between the heparanase groups and the SHAM group were 194.4±29 compared to 98.5±20 (p=0.002), 135.1±15.7 compared to 52.3±9.1 (p=0.0001), 104±2.7 compared to 40±1.65 (p=0.0002). An improvement of CD11b, CD18 was observed in the treated groups, 253.8±27.7 compared to 453±29.4 (p=0.0004) and 98.3±9.2 compared to 136.7±5.8 (p=0.008).

Conclusions: Heparanase treatment of healthy rats led to an increase in the expression of CD11b, CD18, CD29 integrins on leukocytes, which facilitates transmigration of inflammatory cells towards the injury sites. Heparanase plays a versatile role, acting either in facilitating or decreasing inflammatory responses.

Rib Fractures: Comparison of Associated Injuries Between Pediatric and Adults Population

Kessel Boris, Dagan Jasmin, Swaid Forat, Ashkenazi Itamar, Olsha Oded, Peleg Kobi, Givon Adi, Israel Trauma, Alfici Ricardo.

Background: Rib fractures are considered a marker of exposure to significant traumatic energy. In children, due to high elasticity of the chest wall, higher energy levels are necessary for ribs to fracture. The purpose of this study was to analyze patterns of associated injuries in children as compared to adults all of whom presented with rib fractures.

Methods: A retrospective cohort study involving blunt trauma patients with rib fractures, registered in the National Trauma Registry.

Results: Of 6995 trauma victims who were found to suffer from rib fractures, 328 were children and 6627 were adults. Isolated rib fractures without associated injuries occurred in 19 children (5.8%), and in 731 adults (11%). More adults had four or more fractured ribs compared to children ($p < 0.001$). Children suffered from higher rates of associated brain injuries ($p = 0.003$), hemo/pneumothorax ($p = 0.006$), spleen and liver injury ($p < 0.001$). Mortality rate was 5%, in both groups.

Conclusions: The incidence of associated head, thoracic and abdominal solid organ injuries in children was significantly higher than in adults suffering from rib fractures. In spite of a higher ISS and incidence of associated injuries, mortality rate was similar. Mortality of rib fracture patients was mostly affected by the presence of extrathoracic injuries.

Increasing Number of Fractured Ribs is Not Predictive of the Severity of Splenic Injury Following Blunt Trauma: an Analysis of a National Trauma Registry database

Kessel Boris, Swaid Forat, Ashkenazi Itamar, Olsha Oded, Peleg Kobi, Givon Adi, Jeroukhimov Igor, Israel Trauma Group, Alfici Ricardo.

Background: Association between rib fractures and incidence of abdominal solid organs injury is well described. However, the correlation between the number of fractured ribs and severity of splenic injury is not clear. The purpose of this study was to assess whether an increasing number of rib fractures predicts the severity of splenic injury in blunt trauma patients.

Study design: A retrospective cohort study involving blunt trauma patients with concomitant splenic injuries and rib fractures, between the years 1998 and 2012, registered in the Israeli National Trauma Registry.

Results: Of 321,618 patients with blunt mechanism of trauma, 57,130 had torso injuries, and of these 14,651 patients sustained rib fractures, and 3,691 patients suffered from splenic injury. Concomitant splenic injury occurred in 1,326 of the patients with rib fractures (9.1%), as compared to 2,365 patients sustaining splenic injury without rib fractures (5.6%). The incidence of splenic injury among patients sustaining 5 or more rib fractures was significantly higher compared to patients suffering from 1 to 4 rib fractures. Among patients with splenic injury, the tendency to sustain associated rib fractures increased steadily with age. Patients with concomitant rib fractures had higher Injury Severity Score (ISS), but similar mortality rates, compared to patients with splenic injury without rib fractures. Among patients with concomitant rib fractures and splenic injury, there was no relation between the number of fractured ribs and the severity of splenic injury, neither as a whole group, nor after stratification according to the mechanism of injury.

Conclusions: Although the presence of rib fractures increases the probability of splenic injury in blunt torso trauma, there is no relation between the number of fractured ribs and splenic injury severity.

Concomitant Hollow Viscus Injuries in Patients with Blunt Hepatic and Splenic Injuries: an Analysis of a National Trauma Registry database.

Swaid F, Peleg K, Alfici R, Olsha O, Ashkenazi I, Givon A, Israel Trauma Group, Kessel B.

Introduction: Non-operative management of blunt hepatic or splenic injuries has become the standard approach for stable patients. A major dilemma encountered when selecting such patients is the probability of missing an associated hollow viscus injury (HVI). This study aims to assess the incidence of HVI in these patients, and to evaluate whether it is correlated to the severity of hepatic or splenic injuries.

Methods: A retrospective study involving blunt trauma patients with splenic and/or liver injuries, registered in a National Trauma Registry.

Results : Of 57,130 patients with blunt torso injuries, 2,335 (4%) sustained hepatic injuries (H group), 3,127 (5.4%) had splenic injuries (S group), and 564 (1%) suffered from combined hepatic and splenic injuries (H+S group). Overall, 957 patients sustained 1,063 HVI. The incidence of HVI in the absence of splenic and hepatic injuries was 1.5%, compared to the S (3.1%), H (3.1%), and H+S (6.7%) groups. A clear correlation between the severity of organ injury and the incidence of HVI was demonstrated in the S group, but not in the H group.

Conclusions: The presence of blunt splenic and/or hepatic injuries predicts a higher incidence of HVI, especially if combined. The incidence of HVI correlates to the severity of splenic, but not hepatic, injury.

Severity of Liver Injury Following Blunt Trauma Does not Correlate to the Number of Fractured Ribs: an Analysis of a National Trauma Registry database

Swaid Forat, Peleg Kobi, Alfici Ricardo, Olsha Oded, Jeroukhimov Igor, Givon Adi, Israel Trauma Group, Kessel Boris.

Rib fractures are a marker of severe injury, predicting a higher incidence of associated injuries. The purpose of this study was to assess whether an increasing number of rib fractures predicts the severity of liver injury in blunt trauma patients.

Methods: A retrospective cohort study involving blunt trauma patients with concomitant liver injuries and rib fractures, registered in a national trauma registry.

Results: Of 57,130 patients with blunt torso injuries, 14,651 patients sustained rib fractures, and 2,899 patients suffered from liver injury. Concomitant liver injury occurred in 1,087 of the patients with rib fractures (7.4%), as compared to 1,812 patients sustaining liver injury without rib fractures (4.3%). Six or more rib fractures predicted a higher incidence of liver injury. Among patients with liver injury, concomitant rib fractures was associated with higher Injury Severity Score (ISS), but similar mortality rates. Among patients with concomitant rib fractures and liver injury, there was no relation between the number of fractured ribs and the severity of liver injury.

Conclusions: Although the presence of rib fractures increases the probability of liver injury in blunt torso trauma, there is no relation between the number of fractured ribs and liver injury severity.

Vertebral Artery Revascularization

The Hillel Yaffe Medical Center Experience

O. Galili, A. Kantarovski, Z. Kovzantsev, S. Sabetay, I. Portnoi

Background: Symptoms of vertebrobasilar ischemia (VBI) can be caused by both flow limiting lesions and embolic phenomena of the vertebral arteries. VBI is often under diagnosed and under treated since, quite the opposite with carotid artery stenosis, the optimal management of vertebral artery (VA) stenosis has received limited attention with controversial results in the literature and, therefore, is currently poorly understood.

Methods: We present a retrospective review of our medical center's experience with VA reconstruction. Between February 2006 and November 2013, 9 patients underwent 12 VA reconstructions, including transposition of external carotid artery to VA (V3) at the C1-2 level (n= 7), bypass from common carotid artery to VA (V3) with great saphenus vein (n=3), and relocation of VA origin (n=2). The presenting symptoms were attributed to flow limiting lesions in 8 cases (66%), embolization in 2 cases (17%), and ischemia after penetrating trauma in 2 cases (17%).

Results: All the procedures were performed under general anesthesia with no intra-operative complications. One patient required re-exploration for bleeding. There were no peri-operative death or strokes and no cranial nerve injuries. During follow up, two bypass procedures required endovascular treatment of stenosis in the distal anastomosis and return of VBI symptoms. The symptoms resolved in all patients but one (92%) with no late strokes. Death was recorded 7 years after the procedure in one case – unrelated.

Conclusions: Although our experience includes a small number of patients, our results are in line with the reported in the literature and suggest that VA reconstruction provides good symptomatic relief with acceptable risk in carefully selected patients.

Based on our experience and on the literature the Unit of Vascular Surgery and the Department of Neurology in the Hillel Yaffe Medical center developed a comprehensive protocol for evaluation and decision making in patients with suspected VBI.

First Experience with Aorta Balloon Occlusion for Trauma in Israel: an Old Concept, New Implementations, and Still Many Questions.

Boris Kessel, Dan Hebron, Tal Horer, Forat Swaid, Alexander Korin , Ricardo Alfici

Aorta Balloon Occlusion (ABO) is used widely within vascular surgery in ruptured abdominal aorta aneurysm to gain temporary hemodynamic stability. It is also used for other purposes, such as stent-graft alignment within endovascular surgery .The first use of ABO in trauma was described by Hughes in 1954 in soldier's victims of Korean war. Since then small case series and few animal studies were published which demonstrate the efficacy of ABO in rapid increasing of systemic blood pressure and afterload augmentation following injury. Nevertheless , this tool is still not widely used in current trauma practice. Recently, Brenner reported the single series of six patients from four large-volume trauma centers who were treated with IAO without bleeding related mortality .We present here the first case of ABO done in Israel to our knowledge. The decision of the trauma team was that this trauma victim will not survive thoracotomy and aortic clamping and ABO was used. We think that performing of the aortic occlusion in our case was relatively late. May be early emergency room application of the device was able to change final outcome in this patient. Possible placement of the balloon in the descending aorta and gradual replacement to infra-renal position under fluoroscopy should be strongly considered. However, the ABO allowed us to achieve effective blood pressure and allowed us to continue to on table angio-embolization. This case raised many questions concerning possible indications and future of this technique.

In summary:

IAO is an effective alternative of resuscitate thoracotomy in selected patients. In a well prepared setting IAO may be performed quickly after admission to the trauma room.

Sended for possible publication.

Recurrent Versus First, ST-Elevation Versus Non-ST-Elevation Myocardial Infarction: Results from National Israel Surveys ACSIS 2000-2010

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Patients sustaining a recurrent acute myocardial infarction (AMI) are at an increased risk for complications and death. Patients with ST elevation MI (STEMI) and NSTEMI differ in their management

Objective: We compared the outcome of recurrent to first AMI, STEMI to NSTEMI patients hospitalized in coronary care units in 2000-2010.

Methods: We performed biennial 2-months nationwide AMI/ACS surveys, collecting data prospectively from all patients hospitalized in all CCUs in Israel

Results: Our cohort comprises 7,507 patients: 3,908 STEMI (52%) and 3,599 NSTEMI (48%) patients. In-hospital complications occurred less frequently in first AMI patients.

	STEMI			NSTEMI		
	First n=3,107 (80%)	Recurrent n=801 (20%)	p	First n=2,305 (64%)	Recurrent n=1,294 (36%)	p
Age (yrs)	61	65	0.00001	65	69	0.00001
Women (%)	23	20	0.06	25	19	0.0001
Diabetes	26	39	0.00001	34	46	0.0001
Hypertension	50	60	0.00001	60	74	0.00001
Current Smoker	45	40	0.02	34	25	0.00001
Chronic renal failure	5	12	0.00001	11	26	0.00001
Coronary angiography	81	77	0.02	74	65	0.00001
Any PCI	85	82	0.09	68	63	0.005
Killip ≥2	19	27	0.00001	15	28	0.00001
Hospital mortality	4.9	7.4	0.007	3.3	5.2	0.006
1-year mortality	8.7	16.2	0.00001	9.7	16.4	0.00001

Conclusions: Patients with recurrent AMI are older and have more co-morbidity, and higher rate of hospital complications and mortality. NSTEMI in comparison with STEMI patients are older, have more co-morbidity, a lower hospital mortality but a similar 1-year mortality. It seems that these AMI cohorts aren't similar and may warrant a different therapeutic approach

מדד איכות של ביצוע אנגיופלסטיקה כלילית דחופה (Primary PCI) בחולי אוטם שריר הלב עם עליית מקטע ST (STEMI) תוך 90 דקות - האם ניתן לשפר?

פרופ' אברהם שוטן¹, דר' אוהד הוכמן², פרופ' אהרן פרימרמן¹, דר' דוד שוחט¹, דר' איה אסיף¹, דר' יניב לוי¹, דורי דורית¹, מלכה רינת¹, דר' לובוב וסילנקו¹, פרופ' שמחה מייזל¹. המרכז הרפואי הילל יפה, ¹ מכון הלב, ² הנהלת המרכז הרפואי.

רקע: אוטם שריר הלב עם עליית מקטע ST (STEMI) נגרם בשל חסימת עורק כלילי. פתיחה מהירה מקטינה את הנזק לשריר הלב ומשפרת את הפרוגנוזה של החולה.

משנת 2013 נקבע הזמן מהגעה לבית החולים עד לפתיחה ראשונית של העורק (door to balloon) תוך 90 דקות כמדד איכות של משרד הבריאות.

מטרת העבודה: להציג את האמצעים שנקטנו על מנת לעמוד במשימה.

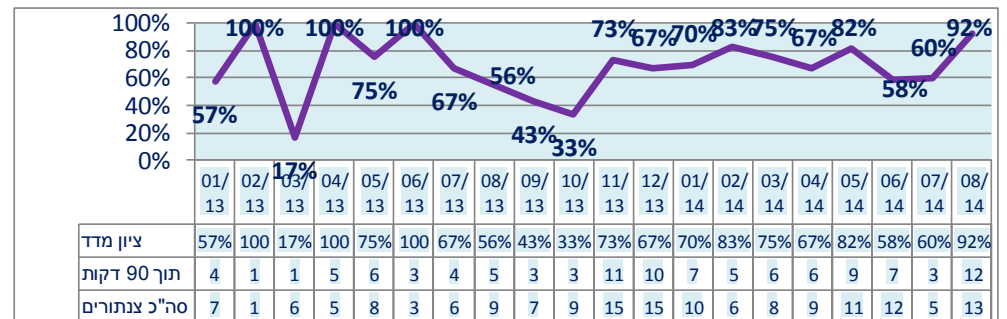
השיטה: לאחר שלב של איסוף נתונים ומיפוי החסמים, שמענו עמידה בזמן הנדרש, חיברנו נוהל חדש, שכלל שינוי מהותי בנוהלי העבודה. הנוהל נכתב תוך הידברות עם המעורבים בביצועו וקבלת תיקונייהם והסכמתם לביצועו. הוא יצא כנוהל מחייב של בית החולים.

תוצאות: להלן לוח הזמנים של שלבי הביצוע לפני הנוהל וע"פ הנוהל

שלב	אבחנה	בדיקת קרדיולוג	דין והזעקת הצוות	הגעת הצוות	הכנת החולה	דיקור העורק ובלון ראשוני	סה"כ
זמן (בדקות) לפני הנוהל	10-40	10-20	10-20	35-65	5-20	10-20	80-185
זמן (בדקות) ע"פ הנוהל	10	0-5	0	35-65	0-5	10-20	55-105

לצורך הטמעת הנוהל נדרשו שיחות מסע הסברה ממושך. בנוסף, כל מקרה של אי עמידה בזמנים נחקר, כולל שיחה אישית עם המעורבים בביצוע.

כפי שניתן לראות במהלך מרבית 2013 מרבית חולי STEMI שעברו PCI ראשוני לא עמדו בזמן הנדרש (90 דקות). אולם עם תחילת העבודה על הנוהל והטמעתו חל שיפור.



לסיכום: מדד ביצוע PCI ראשוני בחולי STEMI תוך 90 דקות הוא ישים. מיפוי חסמים ותיקונם, קביעת נוהל מחייב מאפשרים שיפור משמעותי בביצוע.

הקשר בין תפיסת חולי הלב את מחלתם לבין חרדה ודיכאון לאחר התערבות מלעורית (PCI)

ענת גלס RN, MA, טיפול נמרץ לב, המרכז הרפואי הלל יפה

רקע: מחלות לב כליליות הם גורם תמותה עיקרי בישראל ובמרבית המדינות המערביות. הטיפול הנפוץ ביותר לשיפור זרימת הדם לשריר הלב הינו צנתור כלילי. למרות העלייה במספר הצנתורים, מעט ידוע על השכיחות בדפוסי הדיכאון והחרדה בקרב חולים אלו. תיאוריית ייצוג המחלה נבנתה כדי לנסות להבין את התנהגויות המטופלים כלפי בריאותם, אך תיאוריה זו לא נבדקה בהקשר לדיכאון, חרדה ומחלות לב.

מטרת המחקר: מטרת המחקר היו לתאר את רמת הדיכאון, החרדה ותפיסת המחלה לאחר צנתור כלילי ולבדוק את הקשרים בין מושגים אלו.

השיטה: המחקר מתאמי. המדגם היה מדגם נוחות. איסוף הנתונים כלל חלוקת 3 שאלונים: שאלון דמוגרפי, (Broadbent, Petrie, Main &) The Brief Illness Perception Questionnaire (Weinman, 2006) ו- Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) שהועברו לנבדקים לאחר צנתור כלילי.

ממצאים עיקריים: הגיל הממוצע עמד על 56.3 שנים (± 10.7). רוב הנבדקים היו גברים (88,88%, n=88), נשואים (81,81%, n=81), ילידי ישראל (58%, n=58) ויהודים (68,68%, n=68). רוב הנבדקים היו מחלות רקע (52%, n=52). רוב הנבדקים הגיעו דרך חדר המיון (54%, n=54). רוב הנבדקים היו ללא אבחנה של אוטם בשריר הלב (58%, n=58). הרוב (77%, n=77) שללו נוכחות של דיכאון אך 10% (n=10) דיווחו על דיכאון חמור. הרוב (57%, n=57) לא דיווחו על חרדה אך 22% (n=22) דיווחו על חרדה חמורה. נמצא קשר מובהק סטטיסטי בין תפיסת המחלה לבין דיכאון לאחר צנתור כלילי (דיכאון: $r=0.42$, $p=0.0001$), הכוללים השלכות ($r=0.28$, $p=0.005$), שליטה עצמית ($r=-0.32$, $p=0.001$), זהות ($r=0.36$, $p=0.0001$), מרכיב התפיסה הרגשית - דאגה ($r=0.26$, $p=0.010$), ותפיסה הרגשות השליליים ($r=0.35$, $p=0.0001$). נמצאו קשרים מובהקים סטטיסטיים בין תפיסת המחלה ומרכיביה לבין חרדה (חרדה: $r=0.58$, $p=0.0001$), הכוללים השלכות ($r=0.39$, $p=0.0001$), שליטה עצמית ($r=-0.39$, $p=0.0001$), זהות ($r=0.37$, $p=0.0001$), התפיסה הרגשית - דאגה ($r=0.44$, $p=0.0001$), תפיסת הרגשות השליליים ($r=0.58$, $p=0.0001$). בנוסף, נמצא קשר שלילי מובהק סטטיסטי בין גיל וחרדה ($r=-0.25$, $p=0.012$), כלומר, ככול שהגיל נמוך יותר רמת החרדה גבוהה יותר. נמצא כי מוסלמים יותר בחרדה ($p=0.010$) ובדיכאון ($p=0.000$) מאשר יהודים. נמצאו הבדלים מובהקים מבחינה סטטיסטית ברמת הזהות והזמן לפי הדיווח בתיק הרפואי על מחלת הרקע [זמן: $F(1,97) = 4.8$, $p=0.03$; זהות: $F(1,98) = 8.3$, $p=0.005$]

מרכיבי תפיסת המחלה (השלכות, שליטה עצמית, זהות, רגשית- דאגה ורגשות שליליים), גיל ודת תרמו ברמה מובהקת לשונות ברמת החרדה ($R=0.72$, $p<0.0001$) - כש- 51% מהשונות של חרדה מוסברת על ידי המודל. נמצא ששליטה עצמית, דאגות וגיל תרמו ברמה מובהקת למודל. נמצא מודל מובהק מבחינה סטטיסטית בין מרכיבי תפיסת המחלה (השלכות, שליטה עצמית, זהות, רגשות- דאגה ורגשות שליליים), גיל ודת ($R=0.61$, $p<0.0001$) - כש- 37% מהשונות של דיכאון מוסברת על ידי המודל. נמצא ששליטה עצמית ודת תרמו ברמה מובהקת למודל.

סיכום ומסקנות: לרוב, השכיחות של חרדה ודיכאון היו נמוכות אך אחוז ניכר סבלו מרמות חמורות. נמצא קשר בין מספר מרכיבי תפיסת המחלה לבין דיכאון וחרדה. יש לאתר קבוצות סיכון לחרדה ולדיכאון דרך תפיסת החולים את מחלתם ולהמשיך ולחקור את הגורמים לדפוסי הדיכאון והחרדה בקרב חולי הלב על מנת להקל עליהם בהתמודדות עם מחלתם.

Novel System and Method for Real Time Co-Registration of IVUS with Coronary Angiography

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Introduction: During coronary angiography and percutaneous coronary interventions (PCI) only the lumen of the coronary vessel is imaged. The complete pathology of the vessel wall, namely the extent of calcification, soft plaque and lesion length cannot be accurately determined. These can be imaged using IVUS. We aimed to investigate the accuracy, feasibility, safety and value of a novel method of co-registration of IVUS and coronary angiography images. The method is designed to seamlessly integrate into the routine catheterization procedures and provide information to assist in decision making during the interventional procedure.

Methods: Phantoms simulating the coronary tree were used to test the accuracy and potential of co-registration. We included patients who underwent IVUS during cardiac catheterization. Analysis and feasibility was performed first offline and then in 36 patients and 42 arteries. The registration result was displayed on a separate screen in the catheterization laboratory.

Results: Preclinical validation showed that the co-registration of the coronary tree is feasible, and measurements of length and diameter are precise. Co-registration in the catheterization laboratory was successful in all cases and aided in selection of strategy, the length and size of balloons and stents and other device usage.

Conclusion: This is the first report of a novel method for IVUS and angiographic co-registration. In this pilot study, we found that this method is feasible, accurate, and easy to use. It can be used for determining stent size and location, and providing a reference vessel pathway and structure. The automatic co-registration is done fast and in a user- friendly way. It may reduce patient exposure to X-radiation, the number of injections of contrast material that are needed to visualize the coronary vasculature and the overall duration of the PCI.

Lung Impedance-guided Therapy of Patients with Chronic Heart Failure Improves Clinical Outcome

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Background: decompensation of patients with chronic heart failure (CHF) leading to re-hospitalizations for pulmonary congestion or edema (PCE) is an unresolved problem. At the initial stages of decompensation, patients have neither complaints nor overt signs of PCE. Current methods for PCE monitoring such as implantable devices, are invasive and of low sensitivity (35-76%) and monitoring by chest x-rays is both impractical and detrimental due to radiation exposure. Decreasing lung impedance (LI) is the result of an increase in pulmonary congestion. PCE monitoring was done by device which is 25-fold more sensitive than current ones due to measurement LI instead widely used transthoracic impedance.

Aim: To evaluate the effectiveness of treatment guided by the new LI device of patients with CHF.

Methods and Results: We have shown previously that an LI decrease of more than 24% from dry (baseline) LI reflects the clinical threshold of lung fluid accumulation that signifies the evolution to PCE and hospitalization by >90% probability. We recruited 222 patients during the first month after hospitalization for PCE (age 67±11 years, male 85%, LVEF 26±7%) at NYHA II/III/IV (97/86/39, respectively) and followed them in an outpatient clinic for 32±21 months on a monthly basis. Initial NT-proBNP level was 3771±5185 pg/ml. Patients were randomized (1:1) into 2 well-matched groups according to treatment policy. Group 1 included patients treated according to measured LI while group 2 patients were treated by clinical assessment alone. There were 16 cardiovascular deaths and 5 non-cardiovascular deaths in group 1 and 30 and 6 in group 2, respectively (p=0.006). The average annual number for PCE in groups 1 and 2 were 70 and 139, respectively (p<0.001). In patients whose treatment was LI-guided (group 1) preemptive therapy was intensified 3 times more frequently than in group 2 (p<0.001). The average annual non PCE hospitalizations were 74 and 85 in group 1 and 2 respectively (NS).

Conclusion: Preemptive LI-guided treatment in CHF patients reduced recurrent hospitalizations due to PCE and improved survival.

Short and Long-term Outcome of Impedance-guided Preemptive Therapy Provided to Prevent Pulmonary Congestion-edema in the Course of Acute Myocardial Infarction.

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Background: Patients sustaining an acute myocardial infarction (AMI) frequently develop pulmonary congestion-edema (PED) during their hospitalization. Currently, treatment is initiated after the appearance signs of PED.

Aims: To find out whether non-invasive lung impedance (LI) guided preemptive diuretic treatment of AMI patients developing PED improves clinical outcomes.

Methods: LI was measured by using a new impedance monitor (RSMM Company, Tel Aviv, Israel). Previously we have found that a decrease of 12-14% from normal LI value reflects the beginning transition from interstitial to alveolar edema. In the present study we prospectively randomized 222 patients (2:1 ratio) admitted for AMI without signs of PED at admission and who expressed more than 12% LI decrease from normal baseline to conventional or LI-guided preemptive treatment.

Results: 148 patients were treated conventionally (group 1) and 74 preemptively according LI (group 2). Groups were well matched.

In group 1 all patients developed different stages of PED. Treatment was begun only at symptom onset. In group 2, LI-guided preemptive treatment halted development PED in 89% of patients. Unadjusted analysis shown that hospital stay, 1-year re-hospitalization rate, 6-years development new CHF and survival rate was better in group 2 (p<0.001).

Adjustment for age, LVEF, maximal CK, diabetes, hypertension, hyperlipidemia, smoking, level of creatinine and hemoglobin shown that LI-guided treatment improved clinical outcome. Length of hospital stay reduced (OR=5.35, CI: 3.2-8.1, p<0.0001), 1-year re-hospitalization rate reduced (OR=3.7, CI: 2.2-6.1, p<0.001), 6-years occurrence of new CHF reduced (OR=3.5, CI: 1.3-7.5, p=0.002) and 6-years survival rate was better (OR=3.2, CI: 1.2-9.1, p=0.027). Off different clinical and laboratory parameters the major influence on clinical outcome had age, diabetes mellitus, LVEF <30% and maximal CK (>2220 mg/dl), (p<0.001).

Conclusions: LI-guided preemptive therapy halts progression to PED in 89% of patients, and significantly reduces hospital stay, recurrent admissions, evolution of CHF and mortality.

α -Defensin induced atherosclerosis

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Background: Atherosclerosis has features of an inflammatory disease. Neutrophil activation plays a pivotal role in the inflammatory milieu. The hydrophobic peptide alpha defensin is a major component of neutrophil granules. Because alpha-defensin is expressed in atherosclerotic lesions and negatively promotes atherogenesis, we tested the hypotheses that transgenic mice over-expressing alpha would enhance atherosclerosis formation.

Methods and Results: male Def+ mice fed regular diet spontaneously developed lipid streaks lesions. High fat diet for 9 months resulted in significant augmentation in atherosclerosis in the aortic sinuses (4-fold). Colchicine treatment suppressed atherosclerosis development. Def+ mice showed a heightened inflammatory state by means of increased cathepsin staining and macrophage recruitment. In both Def+ and WT mice, traditional risk factors did not differ significantly between groups.

Conclusions: the present study provides strong evidence for a cause and effect relationship between release of α -def from PMNs and progression of lipid streaks in Def+ mice. Inhibiting PMN degranulation with colchicine attenuated lesion development. α -def should be considered as a novel risk factor providing the missing link between inflammation and atherogenesis, and a new target for future treatment.

Usefulness of Non-invasive Monitoring of the "Net" Lung Impedance in Chronic Heart Failure Patients in out Hospital Clinic.

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Background: Prevention of hospitalizations for decompensation in Chronic Heart Failure (CHF) patients is an unresolved issue. The accuracy of existing devices in predicting deterioration is only 38-76%.

Aim: We evaluated the ability of the new a non-invasive method for lung impedance monitoring to predict decompensation in CHF patients.

Methods: Monitoring CHF patients was accomplished by a device which measures "net" lung impedance (LI) instead of traditionally used transthoracic impedance. A decreasing LI reflects accumulation of lung fluid. Changes in the clinical status and LI were recorded at each monthly outpatient visit. Normal Baseline Lung Impedance (BLI) was calculated according special algorithm for each patient. LI changes are represented as percent from baseline according equation: \square LIR = $(LI/BLI-1) \times 100\%$.

Results: 222 CHF patients (67±11 years-old, male- 85%, LVEF- 26±7%) at NYHA II/III/IV (97/86/39) were recruited after index hospitalization for acute heart failure (AHF) and followed in an outpatient clinic for 32±21 months. Initial NT-proBNP level was 3771±5185 pg/ml. During the follow-up period 48 patients (23.4%) died due to cardiovascular deaths. 99 patients were not hospitalized while the other 123 required 388 re-hospitalizations for AHF. 345 hospitalizations for other causes were recorded.

\square LIR = $(LI/BLI-1) \times 100\%$ decreased progressively before hospitalization. Values of \square LIR = $(LI/BLI-1) \times 100\%$ at 1 month, 3 weeks, 2 weeks, 1 weeks, 3 days prior to and at the day of hospitalization decreased by 23.7±11; 24.7±11; 27.8±13.2; 33.1±12.2; 34.1±10.5 and 36.8±10.5% (p<0.001) from BLI. At the time of hospitalization for a non AHF cause, \square LIR diminished only by 12.9±5.9% (p<0.001), (figure). Importantly, in all cases of AHF hospitalizations \square LIR decreased by more than 24% from baseline while in 90% of non-AHF hospitalizations, \square LIR decreased by less than 20%. In CHF patients who had no hospitalizations for AHF during the monitoring period, \square LIR decreased only by 10.2±5.2%.

Conclusions: invasive "net" LI monitoring is a very sensitive to predict hospitalization for exacerbation of CHF. \square LIR decrease by more than 24% from normal baseline represents a high risk zone for re-hospitalization for AHF with 100% sensitivity and 90% specificity. anges and intensification of therapy is mandatory when LI decreases by more than 24%.

Prompt Pharmacological Reperfusion Followed by Early Mechanical Revascularization in Selected STEMI Patients

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Background: Most patients allocated to thrombolysis in the studies that established the superiority of primary PCI (PPCI) over fibrinolysis for the treatment of STEMI, did not undergo definitive revascularization during their admission.

Aim: We assessed the short and long-term survival of STEMI patients that presented 2-3 hours after symptom onset, and were treated immediately by thrombolysis (THR) followed after reperfusion by definitive PCI to the infarct-related artery (IRA) within 6-24 hours. These patients were compared to STEMI patients treated by PPCI.

Methods: From 2008 to 2010, 316 patients underwent reperfusion therapy for STEMI at our hospital. 183 patients (58 %) were treated by PPCI and 133 (42%) by THR. Patients were selected for THR only if symptom onset occurred within 3 hours prior to CCU admission and in the absence of hemodynamic compromise, and all underwent PCI to the IRA within 6- 24 hours after THR. In all aspects patients were treated according to current guidelines.

Results: In-hospital, 1 month, and 1-year mortality of the PPCI patients versus the THR patients are presented (Table).

No intra-cranial hemorrhage occurred in the THR group.

	Patient number (%)	In-hospital mortality	1-month mortality	1-year mortality
PPCI	183 (58%)	5 (2.7%)	11 (6%)	17 (9.3)
THR	133 (42%)	1 (0.7%)	1 (0.7%)	1 (0.7%)
p-value		ns	0.016	0.001

Conclusions:

Early-arriving STEMI patients, with no signs of hemodynamic compromise, can benefit from prompt reperfusion by thrombolytic therapy followed by early IRA revascularization. We call for a multi-center, prospective study, to substantiate the validity of this strategy.

Device Motion Indicator, a New Feature to Evaluate Relative Axial Stent Movement Inside Coronary Artery Prior to Deployment

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Aims: The cyclic movement of the heart and the coronary arteries induces relative axial movement between the artery and a pre-deployed intra-luminal device such as balloon or stent which may cause mal-positioning of these devices. The exact nature and extent of this phenomenon is not known yet. Using new feature called Device Motion Indicator (DMI), in patients undergoing PCI, we measured the pre-deployment, relative, intra-luminal stent axial movement in the different coronary arteries and their sub-segments.

Methods and results: The Sync-Rx System is an add-on image processing system with unique enhancement and stabilization power. The DMI is part of this system, and it can detect the intra-luminal device in the X-Ray image stream and measure its relative axial movement in an enhanced and stabilized background. In an on-going study, 160 patients underwent regular PCI with the support of the Sync-Rx image processing system. Eighty eight with MI, ACS, or primary PCI, 49 with chest pain and objective evidence of ischemia, and 23 with chest pain only. The DMI feature identified relative stent axial movement in 190 treated segments: 77 in LAD, 41 in LCX, and 72 in RCA and measured the proximal and distal markers (over the stent carrying balloon) mean displacement span (DS) in millimeters. The mean DS in decreased order were: distal RCA 3.9±2, mid RCA 3.5±1.9, OM1-OM2 2.9±0.8, proximal LAD 2.3±1.6, proximal LCX 1.6±0.8, mid LAD 1.3±1.2. DMI technique and updated data will be presented.

Conclusions: Intra luminal relative axial movement of a stent during its positioning at a lesion site, prior to deployment, is a significant phenomenon seen mainly at the distal and mid RCA, OM1/OM2, and proximal LAD segments (in decreased order). This movement can cause stent mal-positioning. To minimize this relative movement effect, a proper method to optimize stent deployment site, should be developed.

A Case of Unusual Arm Swelling in a Young Man

Paget-Schroetter

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Spontaneous thrombosis of the veins draining the upper extremity was postulated by Sir James Paget in 1875 as a cause of acute pain and swelling of the arm, but von Schroetter, in 1884, was the first to relate the clinical syndrome to thrombotic occlusion of the axillary and subclavian veins.

It was not until 1949 when Hughes, in a review of 320 patients, recognized this disease process as a unique disorder and named it Paget-Schroetter syndrome.

Although rare (1% to 2% of all cases of deep venous thrombosis), this disease causes significant disability in a predominantly young, healthy, active patient population. Moreover, there have been several reports documenting a significant incidence of disability, ranging from 25% to 75%, in untreated patients who develop chronic upper extremity venous hypertension and/or recurrent venous thrombosis.

We report this case of effort thrombosis of the upper extremity (Paget-Schroetter syndrome) caused by hypertrophied muscles. This unusual cause of extrinsic venous compression and intimal injury leading to thrombosis was treated with good outcome.

A Common Complication of Uncommon Disease

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Hypoglycemia is a common emergency condition that is often seen in the emergency department. Acute hypoglycemia should be immediately considered in any patient with altered mental status. Unexpected and recurrent hypoglycemia in a non-diabetic patient necessitates further investigation.

We present a 30-year-old young man who was treated in our emergency department because of recurrent hypoglycemic episodes related to glycogen storage disease type Ia (Von Gierke disease). This is an extremely rare cause of hypoglycemia, especially in adult patients.

GSD is clinically manifested with fasting hypoglycemia – a hallmark of the disease, in addition to hepatomegaly, growth retardation and bleeding diathesis. The biochemical manifestations of this disease are: rapidly decreasing fasting blood glucose values, lactic acidosis, hyperlipidemia, and hyperuricemia. Long-term complications include hepatic adenoma, osteopenia and nephrolithiasis.

Von Gierke disease is an autosomal-recessive condition. It may be explained by mutations of the phosphohydrolase catalytic unit gene of the G-6-P complex, unlike GSD type Ib and GSD type Ic. Deficiency of G-6-P blocks the final steps of glycogenolysis and gluconeogenesis. This results in severe hypoglycemia.

In this case report, the patient presented with a common symptom – hypoglycemia – of an unusual disease - Von Gierke disease (GSD type Ia). An emergency physician should keep in mind that Von Gierke disease may be manifested with additional emergency conditions, such as, gastrointestinal bleeding, nephrolithiasis, acute renal failure and osteoporotic fracture.

Thrombin is a Selective Inducer of Heparanase Release from Platelets via Protease-activated Receptor-1

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Background: Heparanase, known to be involved in angiogenesis and metastasis, was shown to form a complex with tissue factor (TF) and to enhance the generation of factor Xa (Nadir *et al*, Haematologica, 2010). Platelets contain abundant amount of heparanase and were the primary source for the protein purification.

Aims: To identify the inducer and pathway of heparanase release from platelets.

Methods: Pooled platelet rich plasma from platelet units obtained from the blood bank or healthy donors was incubated with ADP, epinephrine, collagen, ristocetin, arachidonic acid and thrombin. Level of heparanase released from platelets was studied by ELISA and western blot analysis. The effect of selective protease-activated receptor-1 (PAR-1) inhibitor (FR171113) and thrombin receptor activator peptide (TRAP) were assessed using platelet aggregometry and heparanase procoagulant activity assays. In-house synthesized inhibitory peptides to TF / heparanase complex were used to evaluate platelet heparanase involvement in activation of the coagulation system.

Results: Heparanase was released from platelets only by the induction of thrombin while ADP, epinephrine, collagen, ristocetin and arachidonic acid exerted no effect on heparanase release. Level of heparanase in the plasma after thrombin induction was 250 folds higher compared to heparanase baseline plasma level. Activation of PAR-1 by TRAP dramatically increased heparanase procoagulant activity and was significantly decreased by the addition of PAR-1 inhibitor or TF / heparanase complex inhibitory peptides.

Conclusions: Heparanase is selectively released from platelets by thrombin *via* PAR-1 receptor. Platelet heparanase is involved in activation of the extrinsic coagulation pathway. The present study widens our understanding regarding potential anticoagulant effect, in addition to anti-platelet effect, of the new clinically studied PAR-1 inhibitors.

Recurrent Anaphylactic Shock in the Young Man

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Systemic mastocytosis is a clonal disorder of the mast cell & its precursor cells. The clinical symptoms & signs of systemic mastocytosis are due to the accumulation of these clonally derived mast cells in different tissues, including bone marrow, skin, the GI tract, the liver & the spleen.

Systemic mastocytosis, often termed systemic mast cell disease (SMCD), is characterized by mast cell infiltration of extracutaneous organs, which is in contrast to cutaneous mast cell disorders, which involve only the skin.

We present case of an asthmatic 40-year-old male who been treated several times in our Emergency Department for unexplained anaphylactic shock with diffuse urticarial lesions. It was decided to investigate the reason for this unexplained emergency condition. The patient's laboratory blood test revealed a borderline normocytic anemia with mild eosinophilia & an elevated sedimentation rate. In light of these findings, a bone marrow biopsy was performed & revealed an excessive proliferation of mast cells.

These clinical & pathological findings confirmed our presumptive diagnosis of systemic mastocytosis.

Because of the patient's broncho-spastic clinical picture, he had been treated with large doses of steroids.

While undergoing this treatment, the patient had developed an acute psychotic state.

The question arose as to whether the patient's symptoms were related to neuro-psychiatric manifestations of systemic mastocytosis or as a known side-effect of large doses of steroids?

This case illustrates the complex & problematic aspects of diagnosis & management of systemic mastocytosis.

Transient Bullous Rash - a Rare Form of Severe Dermatologic Adverse Reaction Following the Administration of Tissue Plasminogen Activator (TPA) in a Case of Acute Stroke

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Introduction: Tissue plasminogen activator (TPA) represents an effective treatment for patients having acute stroke. However, the administration of this drug is linked to some important side effects such as intracranial hemorrhage, anaphylactic shock, angioedema, and rash. We would like to report the case of an unusual and severe dermatologic adverse event - transient bullous rash - following the administration of TPA.

Case presentation: 72 year-old female patient with previous medical history of hypertension and obesity, treated with Ramipril and Disothiaside, presented with dysarthria, dysnomic dysphasia, right hemianopia, and right moderate flaccid hemiparesis. On admission NIHSS score was 11. Brain CT at admission showed no evidence of an acute infarction. The patient was started on 90 mg IV TPA treatment 165 minutes following the appearance of the neurologic signs. Sixty minutes after starting TPA several asymmetrical cutaneous papules and vesicles overlying normal skin were noted in the right chest area with minimal pruritus. The vesicles rapidly became confluent, forming large, tense bullous lesions, measuring up to 3.5 cm, containing clear fluid. The eruption was observed to spread in a caudal direction over the shoulder, neck, face, chest and hand. It persisted for 4 hours and gradually disappeared without any treatment. There were neither oral lesions nor angioedema. Blood pressure was stable and there was no respiratory distress.

Results: A possible explanation for this dermatologic reaction could be the simultaneous activation of complement system and kinin cascades by plasmin, produced by alteplase-cleavage of plasminogen. Complement cascade activation is direct, causing mast cell degranulation and histamine release with consequent vasodilatation. Another explanation might be extracellular proteolysis by plasminogen\plasmin system and metaloproteinases. Lateralization might be triggered through acute changes in the vasomotor tone of the hemiparetic side. Contralateral autonomic imbalance might be secondary to the presence of lesions in the insular cortex, postcentral cortex, basal ganglia and internal capsule.

Conclusions: Bullous rash with lateralization to the paretic side following thrombolytic treatment for acute stroke represents an unusual complication of this treatment. Several possible immune mechanisms are presented as well as a review of the literature of other immunological based adverse events to thrombolysis in acute stroke.

הניסיון המתקדם של בית החולים "הלל יפה" ושילובו עם מדדי האיכות של משרד הבריאות בטיפול הטרומבוליטי בחולים הסובלים משבץ מוחי חד

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ברמה העולמית בשנים האחרונות הועלתה המודעות בנוגע לשבץ המוחי החד, כולל הפגיעה הקשה לא רק בחולה אשר לקה בשבץ אלא גם בכל הסביבה הסוציו-אקונומית הקשורה אליו.

בשנים האחרונות הוחל בטיפול, במטופלים הסובלים משבץ מוחי חד, בשיטות שמטרתן להביא להמסת הקריש ועל ידי כך לפתיחתו, לתיעול מחדש של כלי הדם החסום במוח, לזרימה מחודשת של דם אל רקמת המוח.

בית החולים נערך למתן טיפול הולם ואיכותי העונה על צרכי המטופל הלוקה בשבץ מוחי חד, טיפול הדורש רמה גבוהה של תכנון ותיאום של כל המטפלים בתחומי המקצוע השונים.

שיטות אלו כוללות טיפול בהזלפה תוך ורידית של תכשירים ממיסי קריש ולאז הזלפה תוך עורקית שלהם ישירות אל האזור החסום, באמצעות צנתור של עורקי המוח, לעתים אף בשילוב עם עזרים מכאניים לצורך שליפת קריש הדם.

עם זאת, טיפולים אלו חייבים להינתן במהירות, בחלון זמן טיפולי צר, ועל ידי צוות מקצועי ומיומן, ומצריכים היערכות מתאימה בהיבטי תשתיות, כוח אדם, ומסגרות אשפוז ייעודיות.

הזמן הינו פקטור קריטי בכל הטיפול הטרומבוליטי ולכן, במסגרת בית החולים "הלל יפה", בנינו פרוטוקול חדש אשר נוגע בכל האלמנטים החשובים בהצלחת הטיפול במהירות המקסימאלית. לפי כך, לכל פקטור אשר מעורב בצורה משמעותית בטיפול הטרומבוליטי יש אחראיות המוגדרת בפרוטוקול, כמו כן הודגשה החשיבות של אינטראקציה חיובית בין כל הגורמים המעורבים בטיפול. יחד עם זאת, לאחר כל מקרה וגם בסיום כל חודש מתבצעת אנליזה של המקרים אשר טופלו ע"י טרומבוליזה כמו כן מקרים אשר נקלטו למלר"ד כמקרים פוטנציאליים לטרומבוליזה.

הניתוח של הנתונים הינו יעיל בעיקר לצורך גילוי חסמים מהותיים במהלך הטיפול עם דגש בעיקר על קיצור הזמנים ופותרונות בשטח מתאימים. החסמים העיקריים היו בעיקר בהעברת החולה למלר"ד ובתוך בית החולים, מהלך הזיהוי של חולה עם שבץ מוחי חד, תהליך ביצוע בדיקת CT מח ובדיקות מעבדה, כמו כן עבודתו היעילה של נירולוג במנהלך מקרה. השילוב לאחרונה עם מדדי האיכות של משרד הבריאות בנוגע לטיפול הטרומבוליטי גרם לשיפור משמעותי באחוז המקרים המועמדים ל- TPA אשר עוברים CT מח תוך 25 דקות (מ- 6.3 ברבעון הראשון של 2013 ל- 16.2 ברבעון הראשון של 2014), כמו כן שיפור בזמני DOOR TO NEEDLE (מכניסת המטופל למלר"ד עד מתן הטיפול) ועליה משמעותית של מספר המטופלים אשר קיבלו TPA.

לסיכום יש לציין שהטיפול הטרומבוליטי כדי להצליח דורש מעורבות של מספר גורמים רפואיים ופארא-רפואיים אשר חייבים לתפקד בצורה יעילה, מהירה, בסנכרון ועם דגש לאחר כל מקרה על צורך בניתוח החסמים של תהליך הטיפול.

Flexion relaxation ratio, neck posture, joint position error, and pressure-pain thresholds following tailored three dimensional computerized mobilization of the cervical spine for the treatment of chronic neck pain and associated headache.

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Background: Various therapeutic approaches for chronic neck pain have shown limited efficacy. Two previous studies showed that computerized mobilization of the cervical spine, a novel therapy, is safe and potentially effective treatment of chronic neck pain and associated headache. (River et al. Clin. J. of Pain 2012; River et al. Pain Medicine 2014)

Objective: Investigate several physiological measures, efficacy, and safety following individualized, computerized mobilization of the cervical spine in a three dimensional space for the treatment of chronic neck pain.

Methods: pilot, open trial. Participants: 9 patients with chronic neck pain. A control group without neck pain for the assessment of flexion relaxation ratio, Intervention: A computerized cradle capable of 3-dimensional neck mobilization was utilized. Individualized treatment sessions lasted 20min, biweekly, for 6 weeks. Main outcome measures: Pain visual analog scale (VAS), cervical range of motion (CROM), neck disability index (NDI), joint position error (JPE), Pressure pain thresholds (PPT), Forward neck tilt (FNT), and flexion relaxation ratio (FRR) measured by surface EMG.

Results: Comparing baseline at week 1 with week 6 (end of treatment), the VAS scores dropped by 2.3 points ($p=0.040$). A significant reduction of Pain VAS was still detected on week 12, 6 weeks after the end of treatment, ($p=0.018$). The 6 directions of movement studied by CROM showed a marginally significant combined increase of 11% ($p=0.061$). NDI decreased with marginal significance (week 1 vs. 8) from 15.42 to 9.42 ($p=0.086$); JPE decreased significantly from 2.88° to 1.14° ($p<0.01$); Pain threshold increased from 1.27 Kg/cm² to 2.44 Kg/cm² ($p=0.043$); Forward head tilt decreased from 20.36 cm to 19.02 cm ($p=0.104$). Left sided FRR significantly increased ($P=0.017$). Conclusions: This study provides preliminary physiological evidence suggesting that individualized computerized, 3-dimensional cervical mobilization brings about a positive change in neck posture, cervical neuromuscular control, and the processing of nociceptive and proprioceptive information.

"Epileptic Patients Have an Increased Risk of Carbamazepine Toxicity During Triple Therapy for Helicobacter Pylori Infection - Case Presentation and Review of the Literature"

S. Sabetay, L. Kaplan, B. Weller

Background: Over 50% of world population harbors H.pylori in their upper gastrointestinal tract. H.pylori testing is recommended especially in persons suspected with peptic ulcer disease. Triple therapy administered in peptic ulcer disease patients with positive H.pylori tests includes proton pump inhibitors, the antibiotics clarithromycin and amoxicillin. When starting triple therapy in epileptic patients the drug- drug interactions between clarithromycin and proton pump inhibitors on one hand and carbamazepine on the other hand are sometimes overlooked, predisposing to carbamazepine toxicity.

Methods: Male, aged 58, with generalized tonic-clonic epilepsy treated for two decades with carbamazepine and phenytoin presented with acute ataxia and vertigo. No previous adverse effects related to his antiepileptic medications were reported and drug blood levels were always in therapeutic range. A week prior triple therapy (omeprazole, amoxicillin, clarithromycin) for peptic ulcer disease and positive H.pylori testing was started. Toxic carbamazepine blood levels in ER were obtained and the drug was temporarily discontinued. Clarithromycin-carbamazepine, omeprazole-carbamazepine drug interactions were considered as causing carbamazepine toxicity, therefore triple therapy was interrupted and, after two days, the patient was asymptomatic and carbamazepine levels returned to therapeutic range

Results: Carbamazepine- clarithromycin and carbamazepine- omeprazole interactions determined acute carbamazepine toxicity in our patient, symptoms disappearing following interruption of the triple therapy.

Conclusions: Carbamazepine toxicity represents a definite risk for patients started on triple therapy for peptic ulcer disease due to drug- drug interactions. This risk should be known by neurologists and gastroenterologists, and dose-reduction of carbamazepine could be considered during triple therapy for H.pylori

Wernicke Encephalopathy Following Sleeve Gastrectomy in Obese Patients

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Background: Wernicke's encephalopathy is caused by a nutritional deficiency of thiamine (vitamin B1) and usually is found in chronic alcoholics. Obese patients undergoing sleeve gastrectomy are at risk for developing thiamine deficiency after performing the surgical procedure due to reduced dietary intake, malabsorption, recurrent vomiting. This quite rare clinical picture of Wernicke's encephalopathy usually appears several weeks after gastrectomy, atypical neurological features being common.

Methods: We present two cases of Wernicke's encephalopathy appearing approximately 2 months after sleeve gastrectomy. The first case is of a young man, 18 years old, complaining of recurrent vomiting, dizziness, gait impairment, binocular diplopia, without any symptoms affecting his cognitive status. His neurological examination showed multi-directional nystagmus, binocular diplopia, and severe ataxia. The second case is of a 44 year old woman, presenting to the emergency room due to recurrent vomiting, confusional state, weakness of legs, gait impairment, visual impairment appearing two months after sleeve gastrectomy. On examination the patient was mildly disoriented in time and place, with binocular diplopia, multi-directional nystagmus, mild paraparesis, and ataxia.

Results: In both patients the treatment with intravenous thiamine gave a definite good clinical response, with a gradual improvement of the neurological signs.

Conclusion: Wernicke's encephalopathy is a rare but potential severe complication of sleeve gastrectomy in obese patients. Several cases reported in the literature showed that not always the adequate medical treatment totally reverses the neurological deficit. Nevertheless, this complication is preventable by increased awareness of the surgeons, close monitoring of the food intake and of the neurological status and an adequate vitamin supplementation following bariatric surgery.

Three dimensional computerized mobilization of the cervical spine for the treatment of chronic neck pain and associated headache

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Background: Physical therapy has been successfully used for the treatment of chronic neck pain (NP). However, various manual treatment interventions share a common disadvantage. They are imprecise and inconsistent.

Objective: Investigate the safety and efficacy of computerized mobilization of the cervical spine in 3-dimensional space for the treatment of chronic NP.

Methods: Pilot, open, non controlled, trial utilizing the Occiflex device (Headway Ltd. Misgav, Israel). We recruited patients with chronic NP due to facet joint disorder, myofascial pain syndrome, and whiplash injury. We excluded patients with myelopathy or radiculopathy. Treatment sessions lasted 20 minutes, twice a week, for 6 weeks. We evaluated patients with weekly visual analogue score (VAS), neck disability index (NDI), neck range of motion (CROM), and joint position error (JPE).

Results: We recruited 7 women and two men, with a mean age of 50.5±13.5 years. Treatment was not associated with any significant adverse effects. Comparing baseline (wk 1) to the last week (6) of the trial we have found that pain scores dropped by 2.9 VAS points at the end of the trial ($p<0.01$); CROM increased by 11% on the average of the 6 combined movements ($p=0.01$); NDI showed significant reduction ($p=0.03$); JPE significantly decreased at the end of the study ($p<0.05$). Five out of 7 patients with concomitant headache (tension type headache, migraine, and cervicogenic headache) reported that their headache improved during the trial and 2 weeks following treatment completion.

Conclusions: Preliminary results of this trial and our previous pilot trials show that computerized mobilization is safe and potentially effective for the treatment of chronic neck pain and associated headache.

The co-occurrence of neck pain and headache in this trial and in our previous trials, the response of both pain syndromes to treatment, and the known presence of common biomechanical abnormalities suggests shared pathophysiological mechanisms.

Rate of Risk Factors for Fetal Anomalies in a Rural Hospital Population

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Introduction: The prevalence of Major anomalies in the general population is estimated at 5%.

Prenatal diagnosis which is based on prevention (folic acid consumption), biochemical, ultrasound and cytogenetic testing is an important scientific tool that allows reliable consultation and improves pregnancy outcome.

In 2008 congenital malformations were the leading cause of death in Muslim infants and the second cause of death in Jewish infants.

Objective: To assess the rate of risk factors for fetal malformations in the population attending "Hillel Yaffe medical center" and evaluate whether this rate varies between its sub populations.

Material and Methods:

- A cross section observational study, conducted at the Department of Obstetrics and Gynecology at the "Hillel Yaffe medical center."
- Pregnant women in the second or third trimester of pregnancy or within 3 days after birth were interviewed in Hebrew and Arabic, answering questions regarding demography and risk factors for fetal anomalies.
- **The main variable measured was the usage of folic acid.**
- Demographic variables and the rate of prenatal testing were assessed among women who reported non consumption of folic acid (**study group**) and in women who consumed folic acid (**control group**).

Results: 382 women participated in the study, 71% of them reported consumption of folic acid.

Using Multivariate analysis model, the following parameters were **independently significantly** associated with folic acid consuming:

- Every additional year of **maternal education** increased the chance to consume folic acid by 13.5%.
- **Planned pregnancies** raised the prospect of consuming folic acid by 2.28.
- **High parity** decreased the chances to consume folic acid.

Women who were not consuming folic acid tended to perform less prenatal tests during pregnancy.

Conclusions:

- The rate of folic acid consumption in our study population is similar to the Israeli consumption rate which stands on 77.4%.
- Low maternal educational level, unplanned pregnancies and high parity are related to low consumption rate of folic acid.
- Women who were not taking folic acid had lower rate of prenatal testing.

Demographic variables in the study and control group

Variable	Consumed Folic Acid	Didn't consume Folic Acid
Religion (Jewish)	173 (65%)	45 (41%)
Level of education	14.2±3	12.1±4.04
Parity	2.6±1.8 (2)	3.4±1.9 (3)
Planned pregnancies	210 (81%-)	50 (58%-)

Trends in Termination of Pregnancy in Women With Positive CMV IgM in the 1st Trimester

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Introduction: Cytomegalovirus (CMV) is the most common perinatal infection affecting about 0.2-2% of all neonate worldwide. The risk of infection manifested by sero-conversion during pregnancy is 1-4%. Following primary maternal CMV infection in the first trimester, the virus is transmitted to the fetus in 40% of cases. Of all infected fetuses about 25% may develop some sequelae. Optimal workup and consultation are mandatory before making decisions in pregnancies affected by CMV.

Aim: To evaluate trends in termination of pregnancies in patient with suspected CMV exposure during the 1st of trimester of pregnancy.

Methods: Retrospective computerized cohort study. all blood tests for CMV IgM done between January 2008 and December 2009 on pregnant women in Israel second biggest HMO ("Maccabi") were retrieved using computerized database.

For all women with IgM positive result, IgG Avidity was measured and women were classified according to the risk of acquiring CMV during pregnancy;

High risk (avidity 0-35), moderate risk (Avidity 36-44)
low risk (Avidity ≥45).

Results of Amniocentesis (if done) were mined and documented. Termination of pregnancy was determined by a either specific report to the HMO and/or by the absence of Glucose Challenge Test (GCT) or OGTT in the relevant pregnancy and/or by non reporting of a newborn to the specific family .

Results: During the study period 109,439 women were pregnant, of which 76,712 (70.1%) were tested for CMV.

Positive IgM results were documented in 792 women IgM (1.03%).

Among women with Positive IgM, only 206

(26%) underwent amniocentesis. The rate of Termination of Pregnancy was doubled in women with positive CMV IgM (28.3%) Vs. women with negative CMV IgM (14.3%) p<0.05. It was mostly elevated in women with high risk of acquiring CMV (42.3% termination of pregnancy rate)

Among women with positive CMV IgM (n=792), those who did not undergo amniocentesis were more likely to terminate pregnancy compared to those who performed amniocentesis (35.6% vs 7.3%, p< 0.05). This trend was consistent in all risk groups for acquiring CMV during pregnancy.

Conclusions: A large proportion of women with suspected CMV infection during 1st trimester of pregnancy elect to terminate pregnancy before all means of workup were utilized to rule out or confirm fetal infection with CMV

	Positive IgM (n=792)	Performed Amniocentesis (%)	Terminated pregnancy (%)		Total
			From those who performed amniocentesis	From those who did not perform amniocentesis	
Low Risk	427 (54%)	19%	1.2%	23.4%	19.2%
Moderate Risk	89 (11.2%)	40.4%	5.5%	35.8%	23.6%
High Risk	255 (32.2%)	34.5%	13.6%	57.5%	42.3%
Lost to follow up	21 (2.6%)	--	--	--	--

Making Cervical Ripening EASI: A Prospective Controlled Comparison of Single Versus Double Balloon Catheters

Elad Mei-Dan, Asnat Walfisch, Constanza Valencia, and Mordechai Hallak.

Objective: To compare the efficacy of two mechanical devices for cervical ripening: double versus single balloon catheters, both with extra-amniotic saline infusion (EASI).

Methods: Women at term with a singleton pregnancy presenting for labor induction were assigned to receive the double balloon catheter (with EASI) or the single balloon catheter (with EASI). Outcomes included time from device insertion to delivery, rates of successful vaginal delivery and occurrence of adverse events.

Results: One hundred and eighty six women completed the study. Ripening success was comparable between the double and single balloon arms (96.4% vs. 92.7%, $p=0.55$, respectively). Balloon insertion to delivery interval was significantly shorter, and cesarean section rate was significantly lower in the double balloon arm compared to the single balloon arm (14.3 hours vs. 15.8 hours, $p=0.04$ and 8.3% vs. 20%, $p=0.05$, respectively). There were no significant differences in maternal characteristics, satisfaction or adverse outcomes.

Conclusions: This study is the first documented assessment of the double balloon catheter combined with extra-amniotic saline infusion. Our findings suggest that the double balloon catheter results in reduced time to delivery and higher vaginal delivery rates, compared with the single balloon catheter with EASI, without compromising maternal or fetal safety.

The Unborn Smoker: Does Response Relationship And Adverse Perinatal Outcome

Elad Mei-Dan, Asnat Walfisch, Mordechai Hallak, Richard Brown, Alon Shrim

Objective: To evaluate a possible dose response relationship between active maternal smoking during pregnancy and adverse perinatal outcome.

Methods: A population-based cohort study using the McGill University Obstetrics and Neonatal Database was conducted. Data was collected for all deliveries occurring between 2001 and 2007. Maternal characteristics and pregnancy outcomes were compared between active smokers of different levels and non-smoking controls.

Results: During the study period, 20,938 births occurred. Nearly 8% of the cohort reported active smoking (1,646 women). Preterm delivery rate was significantly more frequent in the smoking group compared to controls (22.2% vs. 12.4%, $p<0.0001$), as was intrauterine fetal demise (1.4% vs. 0.3%, $p<0.001$). Newborns of active smokers were more likely to weigh less ($3150\pm759g$ vs. $3377\pm604g$, $p<0.001$), suffer from respiratory distress syndrome (2.5% vs. 1.3%, $p<0.0001$), suffer from a cardiac malformation (1.5% vs. 0.8%, $p=0.008$) and die (neonatal death 1.2% vs. 0.6%, $p<0.006$). A dose response relationship was demonstrated between levels of daily cigarette smoking and several adverse outcomes. Some adverse perinatal outcomes were present even in the subgroup of women who reported smoking no more than 5 cigarettes per day. Using multiple regression models, smoking was found to be an independent predictor of preterm delivery (OR 1.79, 95%CI 1.56-2.06), NICU admission (OR 1.35, 95%CI 1.13-1.61) and intrauterine fetal demise (OR 1.96, 95%CI 1.17-3.29).

Conclusion: Any amount of daily smoking appears to harm the fetus and newborn. As pregnancy may be a 'window of opportunity' for behavioural changes, efforts to promote smoking cessation should be encouraged.

Can Intra Cytoplasmatic Morphologically Selected Sperm Injection (IMSI) Technique Improve Outcome in Patients with Repeatwd IVF/ICSI Failure- a Comparative Study?

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Introduction: IMSI is an innovative, not invasive method. It obtains the optimal sperm in the ejaculate to perform ICSI. We wanted to evaluate how efficient is IMSI technique in patients with repeated IVF/ICSI failure of at least 3 cycles with no viable pregnancy and /or very poor sperm quality.

Study Design and Methods: All couples that performed IMSI between the years 2007 - 2012 were collected retrospectively to our study.

Demographic data and clinical outcome were recorded. The IMSI` were compared to previous non-IMSI treatments in terms of number of embryos, quality, number of embryo transferred and pregnancy outcome.

Main Results: 42 couples with male infertility were included (total of 90 treatments) and were divided into 2 subgroups: Conventional IVF-ICSI (control) treatment and IMSI treatment. Basic characteristics of the groups were comparable. Fertilization rate and cleavage rate were equivalent. However, the embryos quality showed a trend towards more poorer quality (grade 3-5) embryos in the control group compare to IMSI and respectively, a trend towards superior quality (grade 1-2) embryos in the IMSI group (60% vs. 47%; $P=0.07$ and 40% vs. 53%; $P=0.07$). Implantation, clinical pregnancy rates were significantly better in IMSI group (7.8% vs. 19.2%; $P=0.042$ and 10.5% vs. 39.1%; $P=0.032$). Miscarriage rate was significantly higher in control group (100% vs. 20%; $P=0.032$) and live birth rate was significantly higher in IMSI group (0 vs. 32.6%; $P=0.03$)

Conclusion: The outcome of IMSI resulted in a higher implantation rate, pregnancy rate and most importantly delivery rate.

Comparison Between Treatment of PCOS Patients with an Antagonist vs. IVM Protocol. A Prospective Randomized Study. Preliminary Results

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Introduction: Triggering ovulation with GnRH-a in GnRH antagonist protocols can prevent OHSS in PCOS patients. However large amounts of gonadotropins are used. IVM may be a potential alternative for these patients, without exposure to gonadotropins and risk of OHSS.

Aim: To compare outcomes of IVM versus antagonist protocols in PCOS patients.

Methods: A prospective randomized controlled trial. PCOS patients were enrolled randomly to IVM or antagonist protocol. Patients in IVM group were primed with 150IU rFSH for 3 days and hCG . Patients in the antagonist protocol were treated routinely. The two groups were compared regarding the number of oocytes retrieved, mature oocytes, fertilization and cleavage rates, quality of embryos and ongoing pregnancy rates.

Results: 11 and 10 patients were recruited so far for antagonist and IVM protocol. No significant differences in number of mature oocytes (11.2 ± 5.7 vs. 12.2 ± 8.45), fertilization rate (73% vs. 67%) and top quality of embryos (45.3% vs. 43.9) were observed. The average dose of gonadotropins in the antagonist protocol was $1461 \text{ IU}\pm 560 \text{ IU}$ per cycle, compared to $382\pm 108 \text{ IU}$ in the IVM group ($p=0.001$). Pregnancy rates were comparable - only 9% (1/11) in the antagonist (surprisingly low compared to previous data from our unit of 38%) and 40% in the IVM group (4/10) ($p=0.102$). No OHSS developed.

Conclusions: IVM protocol may be an alternative for infertile women with PCOS who desire to prevent potential adverse effects of gonadotropins treatment and prevent OHSS. These preliminary data demonstrate that IVM has comparable results to standard IVF treatments.

Does BMI Influence Oocyte Volume And Functioning in IVF-ICSI Cycles?

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Introduction: The lower performance of obese patients in IVF treatment cycles is still an enigma and was discussed greatly in the past. Some reported maternal physiology affects oocytes and results in abnormal pregnancy outcomes. Oocytes from animal models with insulin-resistant and obese mice showed delayed maturation, smaller oocyte size, and increased granulosa cell apoptosis. These findings are linked to adverse embryonic and fetal outcomes including delayed embryonic development, growth restriction, anatomic defects, and smaller fetuses. Marquard et al. reported in her study that also in humans, BMI negatively affect oocyte diameter, quality and embryos development.

Aim: To evaluate the effect of two distinct different BMI groups on oocyte volume and treatment cycle outcomes.

Materials: Prospective, cohort study. Women undergoing IVF-ICSI cycles. Patients were divided into two subgroups according to their BMI: Obese BMI > 30 and Lean BMI < 25. We evaluated the effects of BMI on the number of oocytes retrieved, number of matured oocytes, fertilization and cleavage rates, number of top quality embryos and oocyte's diameter and volume. All oocytes were captured after denudation of the granulosa before ICSI was performed. We measured two diameters of each mature oocyte and zona pellucida (ZP) thickness. We excluded the zona pellucida from the total measurement to calculate the oolema diameter. The software allowed the measurement of computer captured digital images by using built-in tools that automatically calculated the mean and standard deviation of each measurement.

Results: 15 cycles of IVF-ICSI were preliminary analyzed. 5 obese patients in which we had 41 oocytes and 10 lean patients with 76 oocytes. Age, duration of treatment, number of follicles, endometrial thickness and peak estradiol level were comparable between the obese and lean groups. Number of oocytes retrieved was the same (11.5 ± 7.7 vs. 11.6 ± 6.8). The number of embryos was comparable as well as the top quality embryos per group (7.2 ± 7.2 vs. 8.0 ± 5.1 and 65.6% vs. 61.6% respectively). We were not able to demonstrate any difference in oocytes diameter, oolema diameter or oocyte volume in between the two groups (164.0 ± 5.6 vs. 162.9 ± 5.5; 144.6 ± 4.3 vs. 143.6 ± 4.9; 1.58*10⁶ vs. 1.55*10⁶ respectively).

Conclusions: Although different BMI level was suggested to influence oocyte size in IVF cycles, in our preliminary data we could not demonstrate any change in the ZP thickness, oocytes diameter and volume nor in the oocytes performance in between the two groups. More patients are currently recruited and pregnancy outcome will be followed as well.

Highly Purified HMG Versus Recombination FSH in Ovarian Hyperstimulation with GnRH antagonist – A Retrospective Study

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Introduction: Highly purified Human Menopausal Gonadotropins (hp-hMG) and recombinant FSH (rFSH) are widely used in the Assisted Reproductive Technology (ART) era. There are only several studies compared the effectiveness of the two preparations in patients undergoing *In vitro* Fertilization (IVF) with antagonist protocol. **Aim:** To compare ART results of HP-hMG and rFSH for controlled ovarian stimulation in GnRH antagonist cycles.

Materials: A retrospective case control study. Records of all antagonist cycles of patients undergoing IVF or ICSI in our unit from January 1st 2011 until December 31 2011 were reviewed. There were 216 ART antagonist cycles: 140 stimulated with rFSH and 76 with hp-hMG. For every case (stimulation with hp-hMG) two controls (stimulation with rFSH) were matched for patient's age and infertility diagnosis. The two treatment protocols were compared regarding the length of stimulation, amount of gonadotropins used, number of oocytes retrieved, fertilization and cleavage rates, and pregnancy rates.

Results: Matching was possible for 53 cases with 96 controls. In the hp-hMG group BMI was higher (27.1 ± 5.2 vs. 25.2 ± 5.3 P=0.039). The hp-hMG group had statistically significant more previous ART cycles (4.3 ± 2.8 compared to 3.0 ± 2.6 P value 0.008) and elevated basal FSH (7.1 ± 3.0 vs. 6.0 ± 2.1 P=0.008). The stimulation duration, endometrium thickness on the day of hCG admission and estradiol level on the day of hCG admission were comparable between the two groups. The amount of gonadotropins used was higher in the hp-hMG group (1993 ± 840 vs. 1342 ± 511 P < 0.001). The number of oocytes retrieved was higher for the rFSH group (8.4 ± 5.3 vs. 6.1 ± 5.2 P=0.01). Fertilization rate were 59% for the rFSH and 52% for the hp-hMG. Pregnancy and live birth rates were comparable: 37.5% and 18.8% in the rFSH group compared to 32.6% and 15.4% in the hp-hMG group (P=0.5 and P=0.61).

Conclusions: It appears that in an antagonist protocol, different gonadotropins products are equally effective. The choice of one or the other product should depend upon the availability, convenience of use and the cost of the product.

חווית אי הוודאות בקרב משפחות המטופלים ביחידה לטיפול נמרץ כללי

אתי מכלוף – אחות יחידה פסיכיאטרית, השרות לבריאות הנפש

אשפוז בטיפול נמרץ כללי מלווה בתחושות של חוסר וודאות ולחץ בקרב משפחות המטופלים, הן בשל מורכבות ודחיפות החולי והן בשל מורכבות הסביבה הטכנולוגית. מחקרים רבים דנו בנושא אי וודאות ולחץ בעיקר במחלות הסרטן והכליות כמו של (Madar & Bar Tal, 2009; Bailey, Wallace & Mishel, 2007) אולם, אלו התמקדו במטופלים ולא בבני משפחה.

מעט מאוד מחקרים נעשו בתחום טיפול נמרץ כללי, ואלו התמקדו בנושאים של שביעות רצון ומילוי צרכים, הם נערכו ברמה האיכותנית ובוצעו על מדגמים קטנים. נכון להיום, לא בוצע מחקר שבדק אי וודאות ולחץ, בקרב בני משפחה בטיפול נמרץ כללי.

המחקר הנוכחי מתבסס על שתי תיאוריות: 1. תיאורית האי וודאות במצב חולי של Mishel (1981, 1984, 1988, 1990). 2. תיאוריית הלחץ של Lazarus & Folkman (1984).

מטרת המחקר לבחון את הגורמים אשר עשויים להשפיע על רמת האי וודאות והלחץ בקרב משפחות המטופלים ביחידה לטיפול נמרץ כללי, על סמך התיאוריה של Mishel והמודל של Lazarus & Folkman.

ההשערות שנבחנו במסגרת עבודה זו הן:

עקביות הסימנים, מוכרות האירוע והסביבה הטכנולוגית, סמכות מהימנה של רופא ואחות קשורים שלילי עם רמת אי וודאות. חומרת החולי קשורה חיובית עם אי וודאות ואי וודאות קשור באופן ישיר לרמת הלחץ. במחקר השתתפו 70 בני משפחה של מטופלים, משתי יחידות לטיפול נמרץ כללי בשני בתי חולים (הילל יפה ולניאדו). הם ענו על שאלון המורכב משמונה חלקים:

1. שאלון רקע כאשר חלקו הראשון בדק נתונים דמוגרפיים וחלקו השני בדק הערכת בן המשפחה את מצבו הבריאותי וסיכויי ההחלמה של המטופל.
2. שאלון לרופא המטפל (APACHE II) (Acute Physiology And Chronic Health Evaluation) לשם הערכת חומרת החולי וסיכויי החלמה של המטופל.
3. בדיקת דפוס הסימפטומים.
4. בדיקת מוכרות הסביבה הטכנולוגית ביחידה.
5. תפיסת הרופא כסמכות אפיסטמית.
6. תפיסת האחות כסמכות אפיסטמית.
7. שאלון אי וודאות לגבי המחלה, הטיפול ותוצאות המחלה.
8. שאלון שבחן את מידת הלחץ.

ממצאי המחקר העיקריים: במחקר הנוכחי, נמצא כי, חומרת החולי ורמת הלחץ קשורים קשר חיובי עם אי וודאות. כמו כן, נמצא כי סמכות אפיסטמית של רופא ואחות מפחיתים אי וודאות. ממצא זה, מחזק את התיאוריה של Mishel (1988) בדבר תרומת הסמכות אפיסטמית בהפחתת אי וודאות. לעומת זאת, לא נמצא קשר בין מסגרת הגירוי (דפוס סימפטומים, מוכרות הסביבה ומוכרות האירוע) לבין אי וודאות, ואף נמצא בכיוון הפוך לתיאוריה של Mishel (1988). מניתוח הממצאים הנוספים עולה כי, כאשר הסביבה אינה מוכרת, נשים חוות יותר לחץ ואי וודאות מאשר גברים. לגבי סמכות אפיסטמית של אחות בכוחה להפחית אי וודאות יותר בקרב גברים מאשר נשים. וממצא נוסף, כאשר הפרוגנוזה קשה, נמצא כי נשים ונבדקים משכילים (מעל 14 שנות לימוד), חוו אי וודאות גבוהה יותר, ממצא זה סותר את התיאוריה של Mishel (1988) בדבר השפעת השכלה על אי וודאות.

תרומות המחקר: במישור התיאורטי יש צורך בהרחבה ושינוי התיאוריה. באופן שיתווספו גורמים נוספים שעשויים להשפיע על תחושות האי וודאות והלחץ. כמו כן, קיימת חשיבות רבה גם בתחום החינוכי סיעודי, אף על פי, שלא נתקבלו קשרים בין מסגרת הגירוי (דפוס סימפטומים מוכרות האירוע והסביבה) לבין אי וודאות, בני המשפחה דרגו את הרופא והאחות כסמכות אפיסטמית גבוהה, כמקור בעל ידע אמין ותקף שבכוחם להפחית אי וודאות. ניתן אם כך, להסיק אודות תרומתם באמצעות מתן מידע אמין לגבי הטיפול, המחלה, ותוצאות המחלה, כחלק בלתי נפרד מהטיפול במטופל.

The Effect of Specific Inspiratory Muscle Training on the Sensation of Dyspnea and Exercise Tolerance in Elderly Patients with Congestive Heart Failure.

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Background: Weakness of the inspiratory muscles may contribute to dyspnea and limit exercise capacity in elderly patients with CHF.

Aim To evaluate the effect of specific inspiratory muscle training (SIMT) on inspiratory muscle performance, lung function, dyspnea, and exercise capacity in elderly patients (>70 y) with moderate-severe heart failure.

Methods: 22 elderly patients (age≤70 y of age) with CHF (NYHA class II-IV) (8 following mechanical ventilation) were recruited for the study, and randomized into two groups: 11 patients received SIMT and 11 received sham training. Subjects trained daily for 3 months. The subjects started training at a low resistance that was then increased incrementally. Spirometry, the maximal inspiratory muscle strength (P_Imax), the endurance, the 6-min walk test and peak VO₂ were studied before the beginning and at the end of the training period.

Results: All patients in the training group showed a significant increase in their P_Imax (from 43.5 to 60.6 cm H₂O), and endurance (from 45.6 to 64.4 %). This was associated with a small but significant increase in FVC, a significant increase in the distance walked (318 to 372 m), and an improvement in dyspnea, while they remained unchanged in the control group. No statistically significant change in the mean peak VO₂ was noted in either group.

Conclusion: SIMT resulted in increased inspiratory muscle strength and endurance, in the elderly. This increase was associated with decreased dyspnea and increase in exercise capacity, even in patients following mechanical ventilation. SIMT may prove to be a complementary therapy in elderly patients with congestive heart failure.

"שיפור חווית המטופל בדיאלזה" - פרויקט ספריה לרווחת מטופלי דיאלזה

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רקע ורציונל לפרויקט: התמודדות עם מחלת אי ספיקת כליות סופנית והטיפול בה, מהווים מקור למתח רב עבור המטופלים. מחלה זו אינה מבחינה בין צעיר למבוגר, בין גבר לאישה – ותור ההמתנה להשתלת כליה הוא כחמש שנים בממוצע. המטופלים מגיעים לטיפול שלש פעמים בשבוע. זמן ההמתנה לפני ואחרי הטיפול הוא כשעה, כך ששעות ארוכות הם שוהים בין כתי בית החולים. בזמן הטיפול הזרוע מחוברת למכונת הדיאלזה, מה שאינו מאפשר תזוזה. מלבד טלויזיה בכל חדר, אין פעילות אחרת שתעזור למטופלים להעביר את זמן הטיפול הממושך. רבים מהם בוחרים לישון תוך כדי הטיפול, מעין "בריחה" מהמצב. **מטרת הפרויקט:** מטרתו הייתה לאפשר למטופל להעביר את זמן הטיפול הממושך באופן מהנה. בשיחות מטופלים חובבי קריאה, עלה כי בשל מוגבלויותיהם, חלקם מתקשים להגיע להחליף ספרים בספריה ציבורית, או לרכוש ספרים. כקוראת מושבעת, יזמתי הקמת ספריית קריאה למטופלים. שיתפתי ברעיון מטופלים, שהתלהבו ותרמו מספרייתם האישית. הממונים ואנשי הצוות נרתמו למשימה. הספרים זרמו, המדפים הוצבו ובדצמבר 2005, נפתחה הספרייה. לכל קורא נפתח כרטיס. בתחילה הייתה זו "ספריה ניידת" על עגלה. כשגדל מספר הספרים, החלו המטופלים להגיע לספריה לפני או אחרי טיפול להחליף ספר, ואף לקחת הביתה. במהלך השנים מאז הקמתה של הספרייה, גופים ציבוריים ופרטיים שונים תרמו להתפתחותה והרחבתה. הספריה פועלת כספריה ציבורית, רב לשונית לכל דבר. ניתן למצוא ספרים במגוון שפות. הקריאה מסייעת בהפגת המתח והכאב בזמן הטיפול. היא לוקחת את הקורא לעולמות הרחוקים מהמחלה, התלות וחוסר האונים. **מסקנות:** הקמת ספריה מהווה מקור תעסוקה לחולים מרותקים ומאפשרת שמירה על יכולת קוגניטיבית. אני רואה בהקמת הספריה ניסיון להעשיר את עולמם של המטופלים מבחינה רוחנית, הקריאה תורמת לתחושה של התרוממות הרוח. בעקבות הקמת ספריה זו, הוקמו ספריות נוספות במחלקה הנירולוגית ובמכון ההמטולוגיה לרווחת קהל המטופלים. אני שמחה לומר כי הפרויקט קיבל הערכה רבה הן מצוותים העובדים בביה"ח, והן ממטופלים ובני משפחה המגיעים לקבלת טיפול.



Colonic Perineuriomas with and without Crypt Serration: a Comparative Study

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Background: Colorectal perineuriomas are characterized by a mucosal proliferation of benign stromal cells expressing perineurial markers admixed with crypts that frequently display a serrated/hyperplastic architecture. Previous studies demonstrated a high prevalence of a *BRAF* mutation in perineuriomas with serrated crypts and suggested that perineuriomas without crypt serration may represent a different type of polyp. Yet, these molecular analyses included only 2 cases of perineuriomas without crypt serration. In fact, no previous studies separately analyzing serrated and nonserrated perineuriomas can be found in the literature.

Design: We retrospectively evaluated the clinical, histologic, immunohistochemical and molecular features of 15 perineuriomas without and 45 perineuriomas with crypt serration (NSP and SP respectively).

Results: No significant differences were found between the groups in regards to gender, age, location and size. Histologically, the perineurial proliferation in SP and NSP demonstrated similar features with fascicles of bland, plump spindle cells surrounding and separating the crypts. All lesions showed immunohistochemical expression with at least two of four perineurial cell markers. Molecular analysis performed in 20 cases (8 SP and 12 NSP) identified *BRAF* mutation of codon 600 in 5 (62%) SP including three with p.V600E (c.1799T>A) and two with p.V600R (c.GT1798_99GT>AG). In contrast, no case of NSP harbored *BRAF* mutations (*p* value 0.004).

Conclusions: Our findings confirm that *BRAF* mutations are originated in the serrated epithelium of SP, and demonstrate that SP and NSP have similar clinical and endoscopic characteristics and a similar stroma, being possible that they represent two variants of a single lesion.

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זרקור לעבר

מאמר מאת ד"ר הלל יפה, לרגל 150 שנה להולדתו

במלאות 150 שנה להולדתו של ד"ר הלל יפה, שעל שמו קרוי המרכז הרפואי, בחרנו לחתום את ספר התקצירים במאמר פרי עטו, הלקוח מגיליון "הרופא העברי", כרך 9, משנת 1936. המאמר עוסק במחלת המלריה, לה הקדיש ד"ר יפה שנים רבות של עבודה ומחקר קליניים.

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דר. הלל יפה,
חיפה, א"י

הרכים חדשות בריפוי המלריה

אין בדעתי לפתור שאלת הרפוי של מלריה ולא למסור את ההיסטוריה המפורטת של המחלה הזאת; הזדמנתי ללמוד את המלריה בעזרת מורי, גם בספרות וגם במעשה במקומות שלטונה, כגון: סיציליה, סביבות רומא, פוצ'יני וכו' ובעיקר 48 שנות עבודתי בארץ ישראל, אשר הציין עסקתי במקומות, שם המלריה הכי חזקה, כמו: חידרה, עתליה, סביבות זכרון-יעקב, משמר-הירדן ויסוד-המעלה. עבודתי השיטתית והאינטנסיבית נותנת לי זכות וחובה להרצות על רפוי המחלה הזאת כמו שהשאלה עומדת כיום.

אין להרבות בדברים על האיטיולוגיה ופתוגנייה (פרויטולוגיה) של מלריה. כדאי רק להזכיר את היסודות של תורת המלריה. ב-1880 גילה לאווירן את הטפילים של מלריה בדמו של בן-אדם. והוא קרא להם בשם פלסמודיום. הטפילים אינם ממלכת הצמחים כמו רוב החודקים הפתוגניים, אלא הם ניזונים מפרוטוואים. אחריו עוד אחרים, האיטלקים Golgi Celli, Crudelli, Bacelli Bignami וכו' גלו את צורות ההתפתחות של הטפילים האלה, אבל מי שנתן בסיס מדעי לפעולה אנטימלרית למחלה שיטתית במגפה זו הוא רונלד רוסס אשר ידע להוכיח שחלק חייהם של הפלסמודיים וחלק התפתחותם הוא בדם של יתוש ידוע (אנופילים) — אחריו אנו יודעים כי להתפשטות המגפה נחוצים שלשה אלמנטים: א) חולה במלריה או לכל הפחות הנושא טפילי המחלה בדמו; ב) בן אדם כריא; ג) נקבת אנופילים אשר מוצצת עם הדם של הראשון צורות ידועות של פלסמודיום (מיניות) ורק אחרי זמן ידוע הנחוץ לשם יצירת זרע חדש של הפלסמודיום בתוך הגוף של האנופילים. זאת האחרונה בהזדמנות מוסרת את הזרע הזה לבן אדם כריא בזמן שנושכת אותו.

אנו מביאים שלש צורות של מלריה בקשר עם הטפילים ומהלך המחלה: א) פלסמודיון חרוזי (1) הוא הטפיל של המלריה השלישנית (2); ב) הפלסמו-

1) Plasmodium Vivax. 2) Malaria Tertiana.

המחבר שלח אלינו את המאמר הזה זמן קצר לפי פמירתו. — המערכת.

דיון הבכיר (8) של מלריה טרופית (4). ג) Plasm. Laveranii או פלסמודיון המלריה בשביל מלריה רביעונית (6).

כל שלושת המינים של מלריה נמצאים בארצנו, אבל זו האחרונה לעתים רחוקות ובמקומות מעטים מאד, וכמעט שאיננה באה בחשבון. בשנת 1918 עשינו-חקירה די שיטתית (פרופ Muhlens ואנכי) בגליל העליון ואז מצאנו מקרים אחדים של פלסמודיון המלריה, בפרט על שפת ים כנרת.

דבר אחד עלי להעיר פה. עד הזמן האחרון כלנו היינו תמיד מביטים על המלריה הטרופית כעל האויב הכי מסוכן לבן-אדם. ובאמת הטרופיקה נותנת רוב מקרים הכי מסוכנים. היינו גם חושבים שזוהי המלריה הכי קשה להרפא ורק הודות לנסיונות מדעיים של אקטון (6) נודענו שהשלישנית היא הכי קשה בשלשת המינים.

ואשר לרפוי נוכח להגיד שעד עתה הכינין עוד נשאר אחד האמצעים הכי עיקריים בריפוי מלריה. ואחרי כל השנויים בהשקפות האבטוריטטיות מאמינים אנו אמונה שלמה שהוא המשפיע היותר טוב על מהלך המחלה בכלל. אנו יודעים שאיננו משמיד את הגמיטוציסטים (צורות מיניות של הטפילים) אבל גם פה מוכרחים להניח שעל ידי רפוי שיטתי וממושך תגמו-טוציסטים סוף-סוף עוזבים את דם החולה. נזכיר פה יתיכף אחרי קבלת כינין הטפילים עוזבים את הדם השיטתי וזה חשוב מאד משלש נקודות-מבט: א) לא צריך לבדוק את דם החולה לכה"פ 5-6 ימים אחרי שלקח כינין; ב) בניגע לפחות ה מ ל ר י ה בתור מגפה על ידי זה הוקטנה מהרבה העברת המחלה; ג) האופי הרציני של המחלה יכול להסתר במשך זמן רב על ידי קבלת כינין. אם איננה מספיקה לרשש את המחלה לגמרה עלולה היא אחרי הפסקת הסממן להתפרץ בצורה מסכנת.

אני חושב שאין הברל גדול בפעולת מלחים שונים של כינין. אם Chin. Muriat מתעכל יותר מהר ומעורר פחות גרוי בקובה. אפשר להגיד שפעולתו פחות ממושכת היות ובמשך זמן קצר עוזב הוא את הגוף. אני בטוח שבכל מקרה, יותר טוב לתת גם Cort. Cinchon. Decoct. אשר בו כנראה יש פעולה יותר נכונה. הנסיון שלי מחזק את ההשקפה הזאת.

פה מקום להזכיר גם את הצד השלילי של פעולת כינין ודרכי זהירות בשמושו. אינני מדבר פה על המקרים המיוחדים של אידיויסינקרציה הנותנת סימנים של אנפילקסיה או של קדחת שחור-שתן. המקרים האלה הם יוצאים

3) Plasmodium praecox. 4) Malaria Tropica; aestivoautumnalis.
5) Malaria Quartana.
6) Acton treatment of benign tertian fever—Lancet, 1920 p. 1257.

קטנות ואחריו 9) סיאולי עם 0.02 גרם 8—4 פעמים ביום קבל תוצאות יותר טובות מכינין ובלי הופעות מסכנות. לפי דעתו ולפי דעת אחרים המקרים של כחלון 10) אשר סיבתם היא יצירת Methemoglobin בדם כמו בהרעלה על ידי CO. המקרים האלה עוברים תיכף. מיוזון 11) עשה עבודה קומפילטיבית יותר מעניינת מן העבודות הקודמות.

בארץ ישראל נכו הרופאים את הסממן הזה במקרים רבים. דר. ניסנבאום בחיפה בבית-חולים „הדסה“ 12) עם בדיקות שיטתיות של דם החולים וקבל תוצאות טובות והעלמת הגמטים במשך זמן קצר.

לידי באו מקרים די רבים של כחלון וגם של כאבים חזקים בכטן. אי אפשר לעבוד מבלי להזכיר מקרה אחד מהידרה מ. ס., בת 12 אשר אחרי פלסמוכינה היתה חולה במשך הרשים בהתקפות לב.

כבר פרופ. מאלנס הציע להשתמש בעיקר בפלסמוכינין מרכב — אשר הוא תרכובת של פלסמוכינה עם כינין וגם אני אינני משתמש אף פעם בפלסמוכינה סתם, רק בתרכובת יחד עם עוד כינין.

Atebrinum V — לפי שולמן 13) הסממן הזה קרוב לפלסמוכינה הנגזרת ממטילן. הוא מר ובתמיסה ניתן צבע צהוב. דר. גרין בליוזפול 14) עשה נסיונות על 50 מקרי מלריה: 16 — שלישונית; 24 — טרופית ו-10 מקרי רביעונית. באותו הזמן 46 חולים במצב דומה הראשוניים קבלו בכל יום ויום (בתור קונטרול) 1.50 כינין — במשך 7 ימי רפוי האטברין השמיד את כל הטפילים בדם שיוזנטים ואף מקרה של רצידיב לא היה, אבל כמו כינין לא הראה שום פעולה על הגמטוציסטים. בכל זאת על ידי רפוי ממושך אפשר לראות השפעה על הגמטוציסטים של מלריה שלישונית מקרים אחרים של כאב ראש חזק וצבע צהוב של העור היו (זה לא Icterus אלא ציבוע הרקמות, כמו ב-Acridin) 15) Chopra. בא לאותן התוצאות והוא מציע לעשות זריקות תוך-ורידיות של אטרברין במקרים שמוצאין הרבה טפילים בדם, וגם במקרים של קדחת שחר-שתן, פרופ. מיולנס עשה נסיונות על 122 מקרי מלריה (85—מ. טרופית; 17 — שלישונית ו-20—רביעונית) ומצא פעולה יותר נכונה ויותר חזקה מהכינין על השיוזנטים וגם יותר חזקה מפעולת פלסמוכינה, אבל זו האחרונה משפיעה הרבה יותר על הגמטים והיא מציע

9) D. M. W. 1927 No. 33. 10) Cyanosis.
 11) Presse Medicale 1927 No. 86.
 12) Wien. Klin. Wochenschr. 1929 No. 10.
 13) Schuleman—British Med. Journal 1928 p. 100.
 14) Lancet—April 16, 1932.
 15) Lancet, October 21, 1933 p. 929.
 16) München Mediz. Wochenschr. 1932 p. 537.

מהכלל. וכמוכן צריך להתחשב אתם ולבחור באחד משני דרכים: או לגמרי לעזוב את הכינין אם הסמנים מטילים דאגה או להשתמש בו לפי ביורדקה: לתת בזריקה-קטנות קטנה של כינין ואחרי 20 רגעים כמות כמעט נורמלית...

אבל יש מקרים אשר אנו פוגשים בהם לעתים יותר קרובות והם מצד אחד מחלות לב ומצד שני נטיה מיוחדת אצל החולים אשר סבלו הרבה במלריה בלי לקבל באופן שיטתי את הכינין, או אשר במשך זמן רב קבלו כינין בלי סדר והכבד איננו פועל כראוי, אלה החולים כרגע ידוע אחרי קבלת כינין או אחרי זריקת כינין מקבלים התקפת קדחת שחר-שתן ונמצאים בסכנת נפש. במקרים אלה (הרופא המנוסה בארצות מלריה יודע על פי רוב את החולים) אני מציע להשתמש בזריקות בתוך הגיד של Chin. Colloid (או 7)

Collobrase de Quinine. אני עשיתי נסיונות במספר ידוע וראיתי ישעם מנות אחדות של 0, 0 1 — 0, 1 2 5. אפשר לגרש את הטפיל.

Chinidin I — גם כן פועלת לטובה במקרי מלריה ובפרט במלריה שלישונית ואשר בעיקר מוצאת את מקומה במקרים של מחלות אחדות של הלב:

Arsenicum II — כל החוקרים מסכימים שיש להסממן הזה תפקיד בעיקר בתור עוזר לכינין; ברוסיה 8) היו משתמשים בשיטה כדלקמן: במשך חודש — 5 פעמים ביום 0.3 כינין וזריקת 0.2 של תמיסת 2% ארסן. ואחרי כן תמיסת יוד: הרפואה האחרונה שמשלה לפני זמן רב בתור עוזרת לכינין; Optochinum III או Methylhydrocuprein — הסממן הזה איננו מר כמעט, ונתן בידי מורנרוטה תוצאות טובות בנוגע לרצידיבים.

Plasmochinum IV — הנסיונות הראשונים על ידי מיולנס היו עשויים במקרי מלרייתרפיה במחלת של Tabes Paraly. Generalis. ספרות עשירה ישנה אודות הסממן הזה אשר בלי ספק יתפוס לו מקום חשוב ברפוי מלריה — הסממן הזה נעשה מן Chinolein ונתן תוצאות באמת טובות מאד במקרים רבים. חשוב מאד להעיר פה שהוא משפיע לא רק על שיוזנטים או אלמנטים בלתי מיניים וגטטיבים, אלא גם על הגמטים (גמטוציסטים) של מלריה שלישונית ועל אלה של מלריה טרופית. אחרי הנסיונות על החולים בשיתוק כללי וכו' פרופ. מיולנס עשה נסיונות שיטתיים על חולים במלריה טבעית והיה שבע רצון. בראשונה השתמש במנות גדולות מ-0.05 ועד 0.15 ביום ואז פגש בהופעות בלתי נעימות. אחרי כן עבר למנות יותר

7) Dr. H. Yoffe—Inject. intravein de Collobrose de quinine—Revue de med. et d'Hygiene tropic 1920 No. 4.
 8) Deutsche Medizin. Wochenschrift 1926 No. 35.

חדשים (עם הפסקות אני נותן ג'כ פלסמוכינין במשך 5 ימים אחרי העונה הראשונה וגם אטרברין, אם הטפילים אינם נעלמים בלי זה) אבל מה שאני נותן כמעט בכל מיני מלריה זאת היא Decoct. cort. cinchonae עוד עם Natr. Cacodyl sen Arrhenol. במלריה עידנית עם חוסר-דם, התרגשות הכבד ועם טהול גדול אני משתמש במנות קטנות של כינין יחד עם ארסן, כטריכינין ואירנוטין. לפעמים אני נותן גם coerul methyl במקרים כאלה אם מצב הכליות מרשה. ופה אם יש אלבומינוריה קלה בלי צילינדרים אינני פוחד לתת מטיילן. מלבד הסממנים הניתנים לריפוי המלריה חשובה מאד ההשגחה על המצב הכללי של הבריאות כמו מזון מספיק ומבוחר, נקיון, רחיצה ומקלחת קלה מזמן לזמן המשמשים עזרה לריפוי.

פרופ. דר. אליעזר רוזינטל

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ריפוי חדש נגד נימונית הנרתיק

מהותה של נימונית הנרתיק (*Trichomonas vaginalis*) וחשיבותה בתור מעוררת מחלה עדין לא הובררה כל צרכה.

מלים אחדות ע"ד המונח העברי *Trichomonas*. כידוע שם זה מרכב הנהו משתי מלים יוגיות *Trichos* — שער, נימה *Monas* פרודה, יחידת, שם שהקדמונים נהנו לכל יצור קטנטן שבעולם. משרניחובסקי ומוזיא מתרגמים *Trichomonas* — אנת הנימה. לפי דעתי אפשר להשתמש פה בהודמנות המוחרדה שסוף המלה נימה ותחלת המלה מונת דומים זה לזה וע"י צרוף של שתי המלים השמטת החברה המשותפת אנו מגוירים את המלה *Trichomonas* ויוצרים מלה חדשה "נימונית".

זמן רב חשבו שטפיל זה כולו זכאי וחרף מפשע, שהוא מתאכסן בנרתיק של הרחם מבלי לעורר כל סימני מחלה.

אבל בשנים האחרונות כמעט כל המלומדים מוציאים עליו גור דין קשה ואומרים שהוא כולו חיב, שהוא מעורר דלקת הנרתיק ויוכל להביא לידי סבוכים קשים. יש רופאים שמרחיקים לכת ואומרים שמלבד הנקד של Neisser התופש מקום מיוחד, הנימונית היא הטפיל היותר חשוב בין כל הגורמים המביאים לידי זיבת הנרתיק.

רפוי מעורב על ידי אטרברין ופלסמוכינין ביחד. דר. דוד בארץ ישראל (17) קרא הרצאה מענינת בקונגרס של רופאים מצריים בירושלים על רפוי המלריה ע"י אטרברין. נסיונות על 52 חולים (35 — מ. טרופית; 8 — מ. שליונית; 4 — מ. רביעונית ו-10 — מלריה תלויה) זאת אומרת אשר לא נכרר הטפיל של המלריה, אבל האבחנה הקלינית בטוחה) והוא מצא ירידת החום בכל מקרים מהיום הראשון עד השלישי של הריפוי, צבע צהוב במקרים אחדים אשר נעלם אחרי ימים אחדים חוץ ממקרה אחד שהצבע נשאר לחודש ימים.

Tebetren VI — כנראה דומה להקורם, זה: methyl-hydrocuperin methyle acridin dehydrochlorat. דר. סטאוט (18) המחבר משתמש בכדורים של 0.15 או באמפולים לזריקות תוך-שריריות.

הוא עשה נסיונות בזולולנד על 100 אנשים מאירופה, כדור אחד בכל 4 שעות עד 80 שעות רצופות ואחרי הפסקה של 4-5 ימים שוב 80 שעות וכן הלאה ארבע פעמים. בכלל קבל תוצאות טובות. כ-18 מקרים שהיו תחת השגחתו התמידית במשך 18 חדשים לא קרה אף רצידיב. התופעות האי-נעימות היו קלות, כמו ומום באזנים, רגש של לחץ בגלגולת וכדומה.

ס י כ ו ם

כלי שום ספק נחוץ להמשיך (בפרט בבתי חולים ובתי מרפא) נסיונות על Tebetren, Atebrin, Chin. Colloid וכו'. אבל עוד לא בא הזמן להפרד מן הכינין. בפלסמוכינין צריך להשתמש לפי דעתי רק במקרה אשר אסור לו להשתמש בכינין בדרך רגילה. עלינו להשתמש במנות מינימליות של Atebrin, Chin. Colloid וכו'.

ש י ט ת ה ר י פ ו י ש ל י : במקרים פשוטים אשר הדם והסימנים הקליניים אינם מעוררים דאגה רצינית, אני נותן 8 פעמים ביום 0.5 Muriat. או Chin. Sulph. ; אם אפשר אני נותן משלשל לפני זה או ביחד עם הכינין והזמן הכי מתאים לכך ברנע של מקסימום החום או כירידתו. ואז אני רגיל לתת בכל שעה 0.50 עד 1.50. אחרי ימים אחדים — גר. אחד ביום וארסן. במקרים יותר רציניים הנני מתחיל בזריקת כינין תוך-שרירית גרם אחד יחד עם 8 סנטימו. מעוקבים של תמיסת פלסמוכינה 1% ומוסיה מים מזוקקים עד 10 סנטימטר מעוקבים.

במקרים של מלריה שליונית אני משתמש לעתים קרובות בכינידין וגם בזריקות תוך-ורידיות של ניאוא-סאלווערסן. אני ממשיך את הריפוי במשך 8

רפוי המלריה על ידי אטרברין — "הרפואה" שנת הרצ"ג חוברת ב' (17) Clinical Observations on Malaria treated with Tebetren—Lancet, November 10, 1932. (18)



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