Is Vicks VapoRub an adequate alternative treatment for onychomycosis?

Evidence-Based Answer

Yes. Vicks VapoRub seems to have a positive clinical effect in the treatment of onychomycosis in this limited case series.


This article was a clinical case series (published 2011) which determined whether Vicks VapoRub was a safe, cost-effective alternative to oral therapy for treating onychomycosis. 18 individuals with proven diagnosis of onychomycosis by culture were given Vicks VapoRub to apply topically and monitored for improvement and/or cure.

Relevance: Participants were recruited from an outpatient family medicine clinic at an air force base including men and women older than 18 years of age with clinical onychomycosis on at least 1 great toenail. People with allergy to Vicks VapoRub or its ingredients, use of any oral antidermatophyte medication, any deformity of the affected nail, or any reason preventing adequate photographic assessment of the nail were excluded. Viek's VapoRub was topically rubbed onto the affected toe nails. The primary outcome measured was mycological cure at 48 weeks defined as a negative KOH and culture and clinical cure measured subjectively and objectively.

Validity: The study is a clinical case series. Participants were not blinded, nor a part of a randomized control trial. All participants were accounted for throughout the study, although there were missed appointments at some of the designated interval follow ups.

Findings: 15 of the 18 participants (83%) showed a positive treatment effect, 5 (27.8%) had both mycological and clinical cure at 48 weeks, 10 (55.6%) had partial clearance, and 3 (16.7%) showed no change. However, all 18 participants were satisfied or very satisfied at the end of the study. Outcomes were better for the 5 participants who had positive cultures for either Candida parapsilosis or T mentagrophytes. This suggests a strong association between the organism and the success of treatment.

Satjit Sanghera, September 2015

Should you use topical antibiotics when you remove toenails?

Evidence-Based Answer: Topical antibiotics do not reduce signs of infection or recurrence


This randomized controlled study with 123 individuals, published in March 2007, investigated surgically treating of ingrown toenail (IGTN) and then applying local antibiotics, phenol, both or nothing.

Relevance: Patients with hallux IGTN and available for 12 months follow-up were included in this study. Exclusion criteria were anyone with peripheral arterial disease, diabetes mellitus, and current oral anticoagulant use. Primary outcomes were postoperative infection and recurrence of IGTN.

Validity: Patients were assigned randomly to one of four treatments by using a sealed numbered envelope. All patients had partial nail avulsion then 1) excision of the matrix, or 2) excision of matrix with gentamicin, or 3) phenol, or 4) phenol and gentamicin. Procedures were performed by one physician in the outpatient setting using the same standard method of nail removal every time. Operator blinding was not possible however, outcomes were assessed by independent observers blinded to the initial treatment. Intention to treat analysis was used. Study was powered to detect a 50% reduction in the rate of infection at 1 week.

Findings: 117 of 123 participating individuals were available at the end of the study. The results showed no significant effect on infections after either 2 days (p = 0.989) or 1 week postoperative (p = 0.676). About half (50%) of the patients treated with matrix excision without antibiotic developed infection by 1 week compared to those (48%) treated with matrix excision and antibiotic. Patients treated with phenolization (58%) had infections vs. patients with no topical antibiotic (52%). The overall findings of the study showed that there was no significant difference between phenolization and matrix excision with or without topical antibiotic in reducing infection status post IGTN removal.

Jose Buenrostro, MD, September 2015
Does bed rest in the prevention of preterm labor (PTL) increase risk of DVT/PE?

Evidence-Based Answer
Bed rest increases the risk of thromboembolic events in women prescribed bed rest versus women not prescribed bed rest in the prevention of PTL.


This is a retrospective case-control study (published 2000) to determine the prevalence of thromboembolic events among women prescribed bed rest for PTL or premature prolonged rupture of membranes (PPROM). The sample size included 192 women on bed rest and 6164 women without PTL or PPROM not on bed rest.

Relevance: The study was conducted at Akron General Medical Center in Akron, Ohio. The inclusion criteria were all women admitted to the antepartum unit for at least 3 days for the treatment of PTL/PPROM from January 1st, 1997 to December 31, 1998. Patients admitted for premature labor were treated with either intravenous magnesium sulfate or subcutaneous terbutaline and were asked to maintain modified or strict bed rest.

Validity: All women were pregnant, similar weeks of gestation, and were similar at baseline. The cohort on bed rest was admitted for at least 3 days and management of these patients was uniform. The study did not specify how many additional days the afflicted women stayed on bed rest. There were no patients lost to follow-up in this study as it was a retrospective study. Identified charts were reviewed by the two authors but inter-rater reliability is unknown.

Findings: Of the 192 women prescribed bed rest, 1 had a DVT and 2 had PE (thromboembolic prevalence = 15.6 cases per 1000 women). Of the 6164 deliveries among women who were not prescribed bed rest for PTL/PPROM, 2 patients had DVT in the post-partum period and 3 women had DVT in the antepartum period (prevalence = 0.8 cases per 1000 women). The prevalence of these events among the 2 groups was statistically significant (p < .0015).

Jihan Mandilawi, September 2015

Should HIV+ patients with hypertriglyceridemia due to ART be managed differently than those without HIV?

Evidence-Based Answer: Probably not


This is a placebo-controlled, double-blinded, randomized crossover study (published August 2014) with 12-week treatment periods and a 4-week washout period which enrolled 41 HIV-seropositive subjects with hypertriglyceridemia (≥150 mg/dL) on HAART. The main objective of the study was to demonstrate the effectiveness of omega-3 fatty acids in therapy for hypertriglyceridemia in patients on HAART.

Relevance: Participants were limited to those who were 18 years-of-age and older, HIV seropositive, taking HAART for at least 3 months, and who had fasting triglycerides ≥150 mg/dL. Two groups of participants were randomly assigned either placebo (corn oil) or omega-3 fatty acids (2g PO BID) for a 12-week treatment period. Following this 12-week period, a 4-week washout period was started. Finally, the groups switched (placebo group started taking omega-3 fatty acids and vice-versa) for another 12-week treatment period. Total cholesterol, HDL, and triglycerides were measured for both groups at baseline, post-treatment, and post-placebo. Primary outcome measured was change in triglycerides.

Validity: Participants were randomly sorted into two groups (A and B). Baseline demographic clinical and laboratory values were comparable, using Wilcoxon rank sums for continuous variables and Chi-square or Fisher’s exact test for categorical variables, without significant variability. Study was blinded and randomized using an outside source (“www.randomization.com”) and only the pharmacy dispensation team knew the assignments. Five patients (out of 41) did not complete the protocol. Members of group A (who received the treatment during the first 12-week period) could not be appropriately compared against their peers in the placebo group during the second 12-week treatment phase due to the group having a lower-than-anticipated triglyceride level. The researchers hypothesize that this may be the lasting result of the omega-3 treatment. This particular study used Lovaza as its omega-3 fatty acid and was funded by GlaxoSmithKline Pharmaceuticals, and there was no comparison made to OTC omega-3 fatty acids.

Findings: This study found that the posttreatment change in triglycerides for both groups had a mean of -63.2 ± a standard deviation of 86.9 (meaning that the majority of participants noted a significant decrease in triglycerides) (95% CI -63.2 ± 28.4) versus the control group which had a change of 29 ± 174. This study did not evaluate effects on morbidity/mortality.

Benjamin Huang, MD, October 2015
**Does Tamiflu (oseltamivir) therapy reduce morbidity in patients with influenza?**

**Evidence-Based Answer**

Oseltamivir reduces the duration of acute influenza in adults but increases nausea and vomiting.


**Type of study:** Double-blind randomized placebo-controlled multicenter (60 primary care and university health centers) trial in the United States conducted from January through March 1998. There were 629 febrile non-immunized adults aged 18-65 years old divided into 3 groups: oseltamivir phosphate 75 mg po BID or 150 mg po BID, or placebo. The main objective of this study was to test if early treatment with oseltamivir would be well tolerated and result in reduction in the severity and duration of acute influenza illness.

**Relevance:** Participants had febrile illnesses of no more than 36 hours duration with temperature of 38 degrees Celsius or higher and at least 1 respiratory symptom and 1 constitutional symptom. They recorded for 21 days 7 influenza symptoms, temperature, usual activities, and overall health status. Patients were excluded if they had active chronic illness or HIV; used steroids/immunosuppressants, had a history of drug/alcohol abuse; or were pregnant. Main outcome measure was time to resolution of illness.

**Validity:** The participants were randomly assigned to 1 of 3 treatment groups stratified by study site and smoking behavior. Both staff and participants were blinded to allocation status throughout the entirety of the study. Limitations included the selectivity of use of oseltamivir, exclusion of people more likely to have severe influenza, and financial support from the developers and license holders of oseltamivir.

**Findings:** 2120 individuals were screened, only 629 met criteria. Participants were young, previously healthy adults in the U.S. with a mean age of 33 years. Among all 629 subjects, oseltamivir illness duration was 76.3 hours for 75 mg and 74.3 for 150 mg vs. 97 hours for placebo (p=.004). Nausea and vomiting occurred more frequently in both oseltamivir groups (18% & 14% respectively) than placebo (7% & 4%; p=0.002 & p<0.001).

Jusel Ruelan, DO, October 2015

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**Does adjunct prednisone therapy for community acquired pneumonia shorten hospital stay?**

**Evidence-Based Answer:** Yes, adjunct therapy for community acquired pneumonia with 50 mg oral prednisone for 7 days shortened hospital stay by 1 day when compared with placebo.


This double-blinded, multicenter, randomized, placebo-controlled trial (published in 2015) was conducted from December 2009 until May 2014 with 402 subjects in prednisone group and 400 subjects in placebo group. The secondary outcome was determining time to effective discharge from hospital.

**Relevance:** Patients were 18 years or older, any race and either male or female with community-acquired pneumonia (24 hour of presentation) from seven tertiary care hospitals in Switzerland. Community acquired pneumonia was defined by a new infiltrate on chest radiograph and presence of respiratory signs and symptoms. Subjects were excluded if permanent inability for informed consent, active IV drug use, acute burn injury, GI bleeding within the last 3 months, known adrenal insufficiency, a condition requiring more than 0.5 mg/kg per day prednisone equivalent, pregnancy or breastfeeding or severe immunosuppression. The treatment group received 50 mg prednisone or placebo daily for 7 days. The secondary endpoint was time to effective discharge from hospital.

**Validity:** The study was valid because the treatment teams were randomized and double blinded. The mean age of the subjects was 74 years old in treatment group and 73 years old in placebo group. Each group had similar rates of comorbidities. One patient in treatment group and three patients in placebo groups were lost to follow up at 30 days. Cox proportional hazards regression was conducted for the secondary endpoint.

**Findings:** For time to hospital discharge in days, 6.0 in prednisone group and 7.0 in placebo group with hazard ratio 1.19 (95% CI 1.04-1.38, p = 0.012). Overall, there was a reduction of length of hospital stay by 1 day for the prednisone group.

Sheena Edmonds, October 2015
Does artificial rupture of membranes speed up delivery?

Evidence-Based Answer
Early amniotomy after vaginal misoprostol is associated with higher successful vaginal delivery rate, and shorter labor duration.


The randomized clinical trial (published in 2013) was conducted September 2009 through December 2010 at Women’s Health center at Assiut University. with 320 pregnant women. The main objective of this study was to test the effectiveness and safety of early amniotomy after induction of labor.

Relevance: Women >36 weeks GA, singleton, Cephalic, AFI >5, and reactive NST were assigned to either early or late amniotomy. Women with EFW >4,000 grams, IUGR, PPROM, polyhydramnios, failed induction of labor despite full dose of misoprostol, or contraindications to NSVD were excluded. Misoprostol 50 µg was administered vaginally every six hours until three of more uterine contraction of 40 seconds duration occurred over 10 minutes or maximum of four doses was reached. Early amniotomy was done in the early active phase of labor for group A (amniotomy group) when 3 cm dilated and amniotomy was not done for Group B (control group).

Validity: The study was valid because the intervention groups were randomly assigned. There was no significant difference between mean age, parity and GA, pre-induction bishop score and indications for labor. The researchers were blinded to which patient would receive intervention. No participants were lost during the study.

Findings: More participants in the amniotomy group achieved delivery within 24 hours than in the control group [117 (73.13%) vs. 105 (65.63%), p = 0.15]. Women in the amniotomy group reported shorter labor duration of about 4 hours than those in control group (.9.72 + 4.61 h vs. 13.61 + 5.61, p = 0.002). Overall, early intervention with amniotomy after vaginal misoprostol for labor induction appeared to be associated with shorter induction-delivery interval.

Amarjot Bains, November 2015

Does more intensive SBP control <120mmHg compared with <140mmHg decrease rates of cardiovascular events in patients with high cardiovascular risk?

Evidence-Based Answer: Targeting a SBP <120mmHg compared to <140mmHg resulted in lower rates of fatal and nonfatal major cardiovascular events and death from any cause in non-diabetic patients at high risk for cardiovascular events, but there was an increase in serious adverse events.


This randomized trial (published 2015) included 9361 people with systolic blood pressure (SBP) of 130 mm Hg or higher. The objective was to compare the results of SBP intervention to a target of < 120 mm Hg vs. < 140 mm Hg.

Relevance: This is a randomized, controlled, open-label trial that was conducted at 102 clinical sites in the US. Inclusion criteria included hypertensive participants who were ≥ 50 years old with SBP 130-180 mm Hg with increased risk of cardiovascular events. Patients who have diabetes mellitus or had prior stroke were excluded. Antihypertensive treatment regimens included major classes of antihypertensive agents and regimens. The major outcome was myocardial infarction, other acute coronary syndromes, stroke, heart failure, or death from cardiovascular causes.

Validity: Participants were similar in age, gender, race, baseline BP, cardiovascular risk, kidney function, lipid panel, # antihypertensive agents, aspirin/statin use, BMI, and smoking status. Participants and study personnel knew study-group assignments but outcome adjudicators did not. Cox proportional-hazards regression was used in intention-to-treat approach based on time to 1st occurrence of a primary outcome event between the 2 study groups.

Findings: A rapid and sustained difference in SBP was observed between the 2 treatment groups with a mean of 121.4 mm Hg in the intensive treatment group and 136.2 mm Hg in the standard treatment group at 1 yr. The median follow-up of 3.26 years due to significantly lower rate of the primary composite outcome in the intensive treatment group of 1.65% per year (243 patients) vs. the standard treatment group of 2.19% per year (319 patients) (hazard ratio 0.75; 95% CI 0.64-0.89; p < 0.001).

Alice Chung, November 2015
**Does Vitamin E help treat Nonalcoholic Steatohepatitis (NASH)?**

**Evidence-Based Answer**
Vitamin E therapy (compared to placebo) was associated with a significantly higher rate of improvement in nonalcoholic steatohepatitis.


This study (January 2005 – January 2007) was a randomized (247 patients into three groups: pioglitazone 30 mg qd, vitamin E 800 IU qd, or placebo), multicenter, double-masked, placebo-controlled trial, lasting 96 weeks. One main objective was to show vitamin E improving clinical and histologic features of nonalcoholic steatohepatitis.

**Relevance:** Patients were 18 years or older and should not have used medications suspected of having an effect on NASH in the 3 months before liver biopsy. Patients with significant alcohol consumption, diabetes, cirrhosis or other forms of chronic liver disease, heart failure, and use of prescription drugs associated with NASH were excluded. The primary outcome was an improvement in histologic findings. Secondary outcomes included overall activity score changes for nonalcoholic fatty liver disease.

**Validity:** The study was a randomized, multicenter, double-masked, placebo-controlled trial. Participants were randomly assigned to one of three groups (Group 1-Pioglitazone, Group 2-Vitamin E, Group 3-placebo). All pills were single soft gels that looked alike. A major limitation of the study was that the trial was prolonged by post-market safety data about thiazolidinedione effects resulting in protocol and consent adjustment.

**Findings:** Primary Outcomes: The study found that vitamin E therapy vs. placebo was associated with significantly higher rate of improvement in nonalcoholic steatohepatitis (43% vs 19%, p=0.001). Vitamin E was associated with reduction in hepatic steatosis (51%; p=0.005).

Secondary Outcomes: Compared to placebo group, the vitamin E treatment group had significant reduction in steatosis and the activity score for nonalcoholic fatty liver disease (p=0.01). Steatohepatitis resolved in a greater proportion of subjects receiving vitamin E than those receiving placebo.

Ashlynn Gordon, January 2016

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**Do prenatal steroids prevent neonatal respiratory distress?**

**Evidence-Based Answer:** Yes, prenatal steroids prevent neonatal respiratory distress


A multicenter randomized placebo-controlled trial (published in 2009) with a sample size of 437 patients to evaluate the effectiveness of a ‘rescue course’ of antenatal corticosteroids (ACS) versus placebo on neonatal respiratory distress syndrome (RDS).

**Relevance:** Multicenter study (May 2003-February 2008) conducted at 18 private institutes and 3 university medical centers. Women with singleton or twin pregnancies, gestation at 25-32 6/7 weeks with membranes intact and at threat of delivering within next 7 days, who completed 1st course of ACS before 30wks gestation, and at least 14 days prior to enrollment were included. Women known with major fetal anomalies, multiple gestation ≥ triplets, cervical dilation ≥ 5cm, rupture of membranes, HIV, active TB, and clinical chorioamnionitis were excluded. Patients were assigned to receive ACS (betamethasone) vs. placebo (saline). The primary outcome was composite neonatal morbidity. The secondary outcome included preterm delivery < 34 weeks, RDS alone, birth weight, IUGR, head circumference, need for surfactants, and pneumothorax.

**Validity:** Study was double-blinded and participants were randomly assigned (ACS 223; placebo 214). Groups were very similar in age, gestation, weight, and maternal age. Attrition was low: 5 patients withdrew/discontinued intervention in ACS group and 4 discontinued intervention in placebo group. Not all patients were given betamethasone, where unavailable the women were given dexamethasone. The study was funded by Maternal-Fetal Medicine practices of Pediatrix Medical Group where most of the investigators are employed. However, investigator and funding source had no stake or interest in the outcome of this study.

**Findings:** The Rescue ACS group (2nd course of ACS) showed significant reduction in composite morbidity: 43.9% vs 63.6% in placebo (OR 0.45, p = 0.002) and RDS: 41.4% in ACS vs, 61.6% in placebo (OR 0.45, p = 0.002). The NNT was 5. There was significant reduction in neonatal respiratory distress along with other comorbidities in ‘rescue dose’ ACS group compare to placebo.

Bobby Aulakh, MD, January 2016
Does prenatal vitamin D prevent asthma in early childhood?

**Evidence-Based Answer**
No, prenatal supplementation with 4000 IU vitamin D (cholecalciferol) did not prevent the development of asthma or recurrent wheezing in early childhood.


This randomized placebo controlled double-blinded trial (published in 2016) included 881 pregnant women and 806 children. The main objective was to examine the effects of vitamin D in preventing asthma or recurrent wheezing in early childhood.

**Relevance:** This study was conducted in 3 centers across the United States: Boston Medical Center, Washington University - St. Louis, and Kaiser San Diego. Eligible participants were women 18 to 39 years, who were gestational ages 10 - 18 weeks and where mother or biologic father had history of asthma, eczema, or allergic rhinitis, were nonsmoker, and English or Spanish speaking. Intervention: 440 women received daily 4400 IU/d vitamin D plus a prenatal vitamin containing 400 IU vitamin D, and 436 received a placebo plus a prenatal vitamin containing 400 IU vitamin D. Outcomes measured: (1) parental report of physician-diagnosed asthma or recurrent wheezing through 3 years of age and (2) 3rd trimester maternal 25-hydroxyvitamin D levels.

**Validity:** The study population was randomly assigned to receive intervention or placebo. The recruitment target was 870 pregnant women, the targeted sample size at age 3 years was 660 children. There were 881 pregnant patients included in this study and 806 children, 70 children were excluded due lost to follow-up or fetal/neonatal death. With a 3-year incidence of 45% in the control group, the power to detect a 25% reduction in the supplemented group was 83%. All tests were 2-sided and the significance level was pre-specified at p < .05.

**Findings:** The study found that 24.3% (95% CI; 18.7%-28.5%) of children on intervention arm and 30.4 % (95% CI; 25.7%-73.1%) on placebo arm developed asthma or recurrent wheezing. The absolute reduction was 6.1% was not statistically significant (p=0.051). However, the study may have been underpowered.

Alejandro Soto, February 2016

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Does episiotomy prevent symptoms of urinary incontinence in women postpartum?

**Evidence-Based Answer:** Episiotomy reduced urinary symptom severity but is not relevant to our population due to a different episiotomy method used and Caucasian demographic.


This is a retrospective study with sample size of 377. The objective was to evaluate effect of episiotomy on women’s quality of life in relation to lower urinary tract symptoms (LUTS) postpartum.

**Relevance:** Patients were from Clinic of Obstetrics and Gynecology in Udine, Italy. This study involved 900 Caucasian primiparous and secondiparous women. 602 of those 900 women (66.9%) represented the prevalence of LUTS and perineal symptoms. Inclusion: 377 women delivered vaginally. Exclusion criteria: parity ≥ 2, prematurity, multiple gestation, lack of US confirmation of age prior 20 weeks, non-Caucasian women, C-section. The intervention was episiotomy. At 12 months postpartum, a two-part questionnaire was administered. The first questionnaire asked about presence of LUTS nd the next step was using the King’s Health Questionnaire (KHQ) to assess quality of life of women with urinary incontinence (UUI) and LUTS. The relevant outcome measured was LUTS severity.

**Validity:** Since this study was retrospective, it was important to have universal criteria: episiotomies always performed mediolaterally on right side of vulva; always performed when vacuum was used. Groups were similar at start as moms had to be full term and BMI prior to pregnancy was similar to post pregnancy. Follow-up times were variable but multivariate analysis (t-test or Wilcoxon test) revealed it had no influence on results. It was unclear if there were patients lost to follow-up.

**Findings:** The episiotomy group had lower prevalence rates of UI, SUI (stress), UUI (urge), and MUI (mixed), although these differences were not statistically significant (p > 0.05). However, episiotomy reduced LUTS related to urinary symptom severity (p < 0.05). There was no discussion pertaining to power analysis.

Leslie Chen, February 2016
Does aspirin prevent colon cancer?

**Evidence-Based Answer:** Although there is evidence that aspirin affects mechanisms that may lead to malignancy, including colon cancer, the lack of randomized placebo-controlled trials make the role of aspirin in clinical practice unclear.


Randomized controlled trial, sample size 22,071, Publication date: 04 August 1993, Objective was to analyze the relationship between aspirin and colorectal tumors by utilizing data from the Physicians Health Study.

**Relevance:** Subjects were 22,071 US male doctors ages 40 to 84 years of age for the period of 1982 to 1988 limiting data to aspirin only. Exclusion criteria: history of vascular disease, cancer, liver or renal disease, gout, peptic ulcer, contraindications to aspirin, or current use of NSAID's or vitamin A.. Physicians were assigned to receive aspirin (325mg) on alternate days or placebo. For each colorectal cancer case other outcomes measured included: stage at diagnosis, location in large bowel, detection from screening vs symptoms, type of signs/symptoms during presentation.

**Validity:** Treatment groups were random and blinded. All patient’s were accounted for at the end.

**Findings:** The RR of developing a colorectal cancer for ASA compared with placebo was 1.15 (95% CI = 0.80-1.65). For in situ cancer and polyps, the RR was 0.86 (95% CI = 0.68-1.10). Aspirin and placebo groups did not differ in stage or prevalence of rectal bleeding at diagnosis. Regular aspirin use was not associated with reduction in the incidence of colorectal cancer during the 5 years of randomization and follow up. The small decrease in polyps in the aspirin group could not be distinguished from a chance association. Furthermore in low dose aspirin users, colorectal cancer mortality was not likely to be reduced by earlier detection and incidence will not have increased due to aspirin induced GI bleeding.

Mario Gutierrez, February 2016

What is the optimum time duration of steroid treatment for a pediatric asthma exacerbation?

**Evidence-Based Answer:** A single dose of oral Dexamethasone (Dex, 0.6 mg/kg) is not worse than 5 days of twice-daily prednisolone (Pred, 1 mg/kg per dose) in the management of children with mild to moderate asthma.


Prospective, randomized, double-blinded study (published in 2006) of children 2 to 16 years of age with acute exacerbation of mild to moderate asthma. The main objective was to compare how effective treatment was for children receiving single-dose oral Dex (0.6 mg/kg to a maximum of 18 mg) vs. oral Pred (1 mg/kg per dose to a maximum of 30 mg) twice daily for 5 days to manage asthma exacerbation.

**Relevance:** Children 2-16 years old were included if they had acute exacerbation (mild to moderate asthma) determined by pulmonary index score (PIS) of < 9 or peak expiratory flow rate (PEFR) ≥ 60%. Children were excluded if severe asthma exacerbation, intensive care admission due to asthma, other lung conditions or infections, or symptoms subsided after one salbutamol treatment. The primary outcome measures were Patient Self-Assessment Score (PSAS) to return to baseline (0 to 0.5) or PEFR to return to below 80%.

**Validity:** Prior to study, PI conducted formal training on how to standardize assessment using PIS and PEFR. Consenting subjects were randomized to receive either Dex or Pred using sealed randomization cards. Both investigators and patients were blinded to which treatment was being used. PEFR could not be used as a reliable outcome measure since only 67% could reliably measure their own PEFR. Their study assumed a 95% power which resulted in having 67 subjects in each group. However, only 54 for the Pred and 56 for the Dex group qualified to participate in this study, reducing study power to 90%.

**Findings:** The mean number of days needed for PSAS to return to baseline (0 to 0.5) in the Dex and Pred groups were 5.21 versus 5.22 days. A single dose of oral Dex (0.6 mg/kg) is not worse than 5 days of twice-daily prednisolone (1 mg/kg per dose) in the management of children with mild to moderate asthma.

Jasmine Lahel, March 2016
Is oral magnesium an effective prophylaxis for migraines?

**Evidence-Based Answer**
Yes, oral magnesium has been shown to reduce the number of migraines in patients compared to placebo.


The above study was a double-blinded randomized control study (published in 1996). Treatment with 600 mg (24 mmol) of daily oral magnesium was given to the treatment group (36 patients), and placebo solution given to the control group (32 patients). Total number of patients included in the study results was 68.

**Relevance:** The patients in this study were adults ages 18-65 years old taken from 8 centers in Europe. The patients had to meet the International Headache Criteria for migraines, either with or without aura. Patients were excluded from the study if they had any underlying conditions that would either affect the type/frequency of headaches, or if they had a condition that would affect the level of magnesium in the body. The primary outcome was reduction of frequency of migraine attacks based on journal records kept by participants.

**Validity:** The patients were assigned randomly into treatment groups. This was a double blind study. Of 81 patients initially enrolled in the study, 13 did not complete the study, all of whom were accounted for, leaving 68 at the end of the study. The study was conducted used a principle intention to treat, however, they ultimately used a protocol correct analysis rather than intention to treat.

**Findings:** The study showed that oral magnesium was effective for migraine prophylaxis over the placebo group. Each group started out with approximately 3.6 migraines per 4 weeks on average. The treatment group had 1.51 fewer migraines from baseline compared to 0.58 less in the placebo group (p = 0.0303).

Danielle Malvini, March 2016

When is the optimal time to deliver late preterm IUGR fetuses with abnormal umbilical artery Dopplers?

**Evidence-Based Answer:** The best time to deliver a fetus with IUGR diagnosed late preterm is at 35 weeks.


Decision-analytical model, simulated cohort of 10,000 IUGR fetuses with elevated umbilical systolic to diastolic ratios diagnosed at 34 weeks.

**Relevance:** Population of interest was IUGR fetuses secondary to uteroplacental insufficiency, this excluded IUGR secondary to multiple gestations, congenital anomalies or chromosomal abnormalities. Interventions were delivery vs. expectant management starting at 34 weeks, at weekly intervals until 38 weeks. Outcomes were stillbirth, neonatal death, and cerebral palsy. Relative risks and probabilities were calculated from a combination of national health statistics and small cohort studies.

**Validity:** Mathematically, the model appears to be fairly strong. All model inputs were chosen randomly using a Monte Carlo microsimulation. Sensitivity analysis was used to assess the different parameter ranges with the outcomes remaining essentially the same until most of the parameters reached the outer limits of their given ranges. However, clinically, this was a fairly complex situation to answer with a mathematically model. Only extreme outcomes were evaluated, such as neonatal death. Other commonly used antenatal testing tools such as NSTs and BPPs were not included in the model.

**Findings:** Delivery at 35 weeks had the fewest combined fetal and neonatal deaths while expectant management until 38 weeks had fewest cases of CP. Of the theoretical 10,000 fetuses, stillbirths at the given gestations were 32 at 35 weeks, 85 at 38 weeks. Neonatal deaths had its nadir at 35 weeks with 94/10,000 and peak at 38 weeks with 175 deaths. QALYs also maximized at 35 weeks. When different scenarios were evaluated, optimal strategy was delivery at 35 or 36 weeks in > 95% of the scenarios.

Erica Delsman, MD, March 2016
Impact of race on pain management outcomes in a community-based teaching hospital following inpatient palliative care consultation.

Austin Sue, MD, Duc Chung, MD, James Simmons, DO, Christine Swift, MSN, Susan Hughes, MS, Teget Hailu, MD
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Background: Recent studies have shown differences in racial perception of pain. These differences are often overlooked in the management of pain in palliative care settings. Our objective was to examine racial differences in pain management outcomes following inpatient palliative care consultation at Community Regional Medical Center.

Methods: Retrospective chart review of all patients from April 2014 to June 2015 was done. Participants were of African-American, Asian/Others, Caucasian, and Latino origins. Outcome measures included pain score from first 24-hour period in hospital (including admission) and 24 hours before discharge (scale 0 to 10).

Results: Sixty-five participants were analyzed. Most patients were Caucasian or Latino, at least 60 years old, diagnosed with cancer, with differences in length of stay and types of health insurance. Median admission pain ranged from 5.3 to 6.9, while median pain 24 hours prior to discharge ranged from 1.2 to 3.3. African Americans had the highest initial pain score of 6.9 and showed most reduction in pain after consultation and prior to discharge (-4.5 and -4.9, respectively). Asians had an initial pain score of 6 and differences of -2.9 and -3.2. Caucasians and Latinos had the same initial pain score of 5.3, and reductions of -3.4 versus -2.0 (p=0.46 and 0.38, respectively). There was an overall pain reduction in all groups combined, p<0.01.

Conclusion: Pain consultation was significantly effective at reducing pain scores. African-Americans had the greatest absolute pain reduction after consultation. However, there were no significant differences in pain reduction between the racial groups.

Affordable Care Act Impact on Emergency Room Visits

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UCSF Fresno Family & Community Medicine

Context: Starting January 1, 2014 the Affordable Care Act (ACA) also known as “Obamacare” went into effect. With more people insured, the hope was for people to first seek care at their outpatient primary care office versus an expensive emergency room (ER), saving the nation millions of dollars.

Objective: Investigate change in ER visits before and after implementation of the ACA.

Design: Retrospective medical records review of ER visits January 2013 - December 2013 will be compared to ER visits July 2014 - June 2015 (about 6 months after ACA began). Setting: Community Regional Medical Center in Fresno, California. The largest ER in California and the only Level I Trauma Center in the Central Valley. Patients: Everyone visiting the ER in the two time frames. Intervention: ACA. Main Outcome: Measures: Primary discharge diagnosis from each ER visit was classified using Billings, et. al algorithm into groups: non-emergent; emergent/primary care treatable; emergent/ER care needed preventable/avoidable; emergent/ER care needed not preventable/avoidable; and unclassified.

Results: There were 115,417 ER visits in the year before the ACA was implemented. Fifty-seven percent of the patients had Medicare or Medicaid, 34% had no insurance, 7% had private insurance and 2% were other or unknown. Thirty-nine percent of the ER visits were either non-emergent or primary care treatable. 7% were emergent, ED care needed but preventable/avoidable. Fourteen percent of the ER visits were emergent and not preventable/avoidable; and 18% were due to injuries. Other reasons patients visit the ER included mental health issues 5%, alcohol related 2%, drug related 1%, and unclassified 14%. The ER data from after the ACA will be analyzed and the data will be compared.

Conclusions: Final results will help the Central Valley target where resources and access to primary care physicians are needed to decrease the number of non-emergent ER visits over time.
Fresno HEARTs (health education & awareness resource teams); Bobby Aulakh, MD; Rashell Reynoso-Garza, MD; Mario Martinez, MD; Shruti Joseph, MD; Melanie Southard, DO; and Judy Ikawa, MS (1)

Utility of a diabetes-themed fotonovela to encourage glycemic control: a culturally appropriate tool for education in Latinos; Jose Buenrostro, MD; Jose Lopez, BS; Juan Carlos Ruvalcaba, MD; Susan Hughes, MS; and Roger Mortimer, MD (1)

Impact of nutrition and physical activity interventions on knowledge and BMI in 6th grade students; Alice Chung, MD, Jose Lopez, BS, and Judy Ikawa, MS (1)

Driving and dementia: Natural history; Inderpreet Feudale, MD; Jusel Ruelan, DO; Alexander Sheriffs, MD; and Judy Ikawa, MS (1)

Tdap immunization among adult patients 19 years and older at the Clinica Sierra Vista - RMC Clinic; Arvin Fuentes, MD (2)

Assessing competency with interpreters: Six years of experience using the OSCE; Ivan Gomez, MD; Susan Hughes, MS; and Judy Ikawa, MS (1)

Training residents to be teachers using objective structured teaching exercises (OSTE); Ivan Gomez, MD; Alex Sheriffs, MD; Judy Ikawa, MS; and Susan Hughes, MS (1)

Affordable Care Act Impact on Emergency Room Visits; Ashlynn Gordon, DO and Susan Hughes, MS (1)

Accessing primary healthcare: a survey of gender and sexual minority populations; Benjamin Huang, MD; Arthur Chyan, MS; Scott Reichelderfer, MS; Liana Milanes, MD; Ivan Gomez, MD; Judy Ikawa, MS; and Susan Hughes, MS (1)

Using diabetic dietary education to improve HbA1c in DM patients; Alejandra Jaimez, MD and Tahmina Rahman, MD (2)

Case report on interstitial lung disease and polymyositis; Kamel Kamel, MD and Malcolm Lakdawala, MD (3)

The HIV care cascade - turning a steep slope into a plateaux; Rehan Kanji, MD, Byron Tran, MD, John Zweifler, MD MPH, Susan Hughes, MS, Oscar Cook, MD, Dorota Rhoads, MD (4)

Comparison of INR values to bleeding and coagulation-related complications in patients with deep vein thrombosis; Sebouh Krioghlian, DO, Robert Tevendale, MD, John Zweifler, MD, MPH, Roger Mortimer, MD, and Susan Hughes, MS (1)

Colorectal cancer screening; Diana Oviedo-Cavazos, MD (2)

Streptococcus intermedius in immunocompromised patients; Sireesha Reddy, MD; Kelly Singh, MBBS (1)

Association of inflammatory biomarkers and extra-coronary calcification (aortic valve calcification, mitral valve calcification, aortic valve ring calcification and thoracic aorta calcification) in HIV seropositive and seronegative men: multicenter AIDS cohort study; Panteha Rezaeian, MD, et al. (5)

Management of chest pain in a community hospital setting; Dorota Rhoads, MD; G. Michelle Ventura, MD; John Zweifler, MD; and Susan Hughes, MS (4)

Patient Satisfaction and Factors Related to Patient-Doctor Relationships; Satjit Sanghera, MD; Alex Soto, MD; Mary Fraijo, LVN; Susan Hughes, MS; and Judy Ikawa, MS (1)

Impact of race on pain management outcomes in a community-based teaching hospital following inpatient palliative care consultation; Austin Sue, MD, Duc Chung, MD, James Simmons, DO, Christine Swift, MSN, Susan Hughes, MS, Tegest Hailu, MD (1)

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