ABSTRACTS IN URGENT CARE

- Heparin-binding Protein
- Prostate Cancer Trial
- Hemodialysis: How Early?
- Overcrowding in the ER
- Guidelines for Treatment of Diabetic Neuropathy

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Each month, Dr. Nahum Kovalski reviews a handful of abstracts from, or relevant to, urgent care practices and practitioners. For the full reports, go to the source cited under each title.

Heparin-Binding Protein: A New Biomarker for Bacterial Meningitis

Key point: A cerebrospinal fluid HBP level >20 ng/mL was 100% sensitive and 99.2% specific for bacterial meningitis in adults.

Citation: Linder A, Akesson P, Studahl M, et al. Heparin-binding protein: a diagnostic marker of acute bacterial meningitis. *Crit Care Med.* 2011;39(4):812-817.

To assess whether cerebrospinal fluid (CSF) levels of heparin-binding protein (HBP) can predict bacterial meningitis, researchers analyzed CSF samples in a prospective cohort of 145 adult patients with clinically suspected meningitis and in a retrospective cohort of 16 patients with bacterial meningitis and 13 patients with viral encephalitis at two hospitals in Sweden. Patients were divided into five groups: bacterial meningitis (41), viral encephalitis (19), viral meningitis (10), neuroborreliosis (7), and controls with normal CSF white blood cell counts (97 patients).

Median levels were significantly higher in patients with bacterial meningitis (376.0 ng/mL) than in those with viral encephalitis (5.0 ng/mL), viral meningitis (4.2 ng/mL), neuroborreliosis (3.6 ng/mL), or in controls (3.5 ng/mL). All but two patients with bacterial meningitis had levels >20 ng/mL. One patient with herpes meningitis and one with herpes encephalitis had elevated levels (40 and 41 ng/mL, respectively). In the prospective cohort (25 patients had bacterial meningitis), an HBP level >20 ng/mL had 100% sensitivity, 99.2% specificity, and 100% negative predictive value for diagnosing bacterial meningitis. Patients in all groups who died had markedly elevated HBP levels (>385 ng/mL).

Published in *J Watch Emerg Med.* April 15, 2011—Kristi L. Koenig, MD, FACEP. ■

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Randomized Prostate Cancer Screening Trial: 20-Year Follow-Up

Key point: Prostate Screening Adds No Survival Benefit at 20 Years.

Citation: Sandblom G, Varenhorst E, Rosell J, et al. Randomised prostate cancer screening trial: 20 year follow-up. *BMJ.* 2011;342:d1539.

Researchers randomized every sixth man in a Swedish city between the ages of 50 and 70 to screening every 3 years; the others underwent no screening. The study, begun in 1987, used digital rectal exam in the first two screenings, and then in 1993, screening for prostate-specific antigen was added. Suggestive results led to fine-needle aspiration biopsy. Outcomes were followed by using national registries of cancer and mortality.

The rate of prostate cancer diagnosis was higher in the screening group than among controls (5.7% vs 3.9%). Localized tumors were more than twice as frequent in the screened group, but the rate of non-localized tumors was similar between groups. Over 20 years, the prostate cancer-specific death risk ratio between groups was not significant. ■

Early Initiation of Hemodialysis

Key point: One-year mortality was higher with earlier than with later initiation, even in healthier patients.

Citation: Rosansky SJ, Eggers P, Jackson K, et al. Early start of hemodialysis may be harmful. *Arch Intern Med.* 2011;14(5);171:396-403.

Recent trends toward early initiation of hemodialysis (HD)—at estimated glomerular filtration rates (eGFRs) >10 mL/minute/1.73 m^2—have been driven by expectations that it would lower early morbidity and mortality in patients with end-stage renal disease (ESRD). Because prior studies were criticized for not controlling for comorbidity, researchers based this study on a US ESRD database of 81,000 HD patients (age range, 20–64) without substantial comorbidities other than hypertension; survival was assessed specifically among the 36,000 "healthiest" patients (those with serum albumin levels >3.5 g/dL).

In analyses adjusted for several clinical and demographic factors in the healthy cohort, death by 1 year was more common among patients who initiated HD at higher eGFRs. For example, compared with mortality in patients who initiated HD at an eGFR <5.0 mL/minute/1.73 m^2, mortality was 53% higher for patients with an eGFR of 10.0–14.9 and 118% higher for patients with an eGFR >15.0. These results corroborate those of a recent Canadian study.

Published in *J Watch Gen Med,* April 5, 2011—Thomas L. Schwenk, MD. ■

Do Mandates Reduce Emergency Department Overcrowding?

Key point: Some valuable lessons were learned from the National Health Service's 4-hour length-of-stay imperative

Citation: Weber EJ, Mason S, Carter A, Hew RL. Emptying the corridors of shame: organizational lessons from England's 4-hour emergency throughput target. *Ann Emerg Med.* 2011;57(2):79.e1-88.e1.

In response to emergency department (ED) overcrowding and long wait times, England's National Health Service (NHS) in 2005 mandated a maximum length of stay (LOS) of 4 hours for nearly all ED patients. Achieving the mandate resulted in financial remuneration, while failure led to undesired attention from the ministry of health. In 2008, the authors interviewed 27 leaders at nine NHS hospitals and identified common themes related to implementation of the mandate.

The percentage of ED patients with LOS <4 hours ranged from 76%-95% before implementation of the 4-hour mandate to 86%-99% after the mandate. At the time of the interviews, three hospitals had always performed well and continued to meet the target, three hospitals struggled for a few years before meeting the target, and three hospitals were still struggling to meet the target.

The interviews revealed four consistent themes related to implementation of the mandate:

- Interdependency (the need for system-wide involvement)
- Contrasting change management strategies between EDs (a collaborative effort) and the rest of the hospital (a more directive top-down approach)
- Staff burden and benefits (nurses were affected most by the mandate)
- Cost and risks of sustaining performance without compromising patient safety and medical education

Published in *J Watch Emerg Med,* April 8, 2011—Richard D. Zane, MD, FAAEM. ■

Experts Issue Guidelines on Treating Painful Diabetic Neuropathy

Key point: Pregabalin should be offered for the treatment of painful diabetic neuropathy.

Citation: Bril V, England J, Franklin GM, et al. Evidence-based guideline: treatment of painful diabetic neuropathy: Report of the American Academy of Neurology, the American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation. *Neurology.* Prepublished online April 11, 2011.

According to new guidelines from the American Academy of Neurology, American Association of Neuromuscular and Electrodiagnostic Medicine, and the American Academy of Physical Medicine and Rehabilitation, Pregabalin should be offered for the treatment of painful diabetic neuropathy (level A evidence).

Among the other recommendations (level B or C evidence) published in *Neurology:*

- Anticonvulsants: gabapentin and valproate should be considered for treatment, while evidence is insufficient to recommend for or against using topiramate. Oxcarbazepine, lamotrigine, and lacosamide "probably" should not be given.
- Antidepressants: amitriptyline, venlafaxine, and duloxetine should be considered, and venlafaxine can be added to gabapentin. Evidence is insufficient to recommend for or against other agents (eg, fluoxetine).
- Opioids: dextromethorphan, morphine sulfate, tramadol, and oxycodone should be considered.
- Other pharmacologic agents: capsaicin or the Lidoderm patch may be considered.
- Non-pharmacologic methods: electrical stimulation should be considered, while magnetic field treatment is not recommended. ■