

Clinical Briefs in Primary Care

The essential monthly primary care update

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Fluoride and Bacterial Content of Bottled Water vs. Tap Water

Source: Lalumandier JA, Ayers LW. *Arch Fam Med* 2000;9:246-250.

Fluoridation of public water in the United States is an almost universal practice felt to improve the dental health of the nation by preventing cavities. Though the water supply of the nation is generally perceived as safe, a burgeoning industry of bottled water indicates substantial preference for proprietary water sources, despite its obvious increased incident expense, and without proof that bottled water provides either greater safety as far as bacterial count goes or more appropriate consistency of fluoride content.

Fluoride content of 57 brands of bottled water varied from 0.3 mg/L (or less) to almost 1.00 mg/L (considered ideal, and achieved by < 10% of bottled waters). Public water samples consistently were within 0.04 mg/L of the optimum level.

Bacteria counts were highly variable in bottled water: less than 0.01-4900 CFU/mL. In tap water, bacterial content was much more consistent, ranging from 0.2-2.7 CFU/mL. Fifteen out of 57 samples of bottled water tested were not as pure (as measured by CFU/mL of bacteria) as tap water, but tap water was not as pure as 39 of the samples of bottled water. The bacterial content of bottled water ranged from 10-1000 times as contaminated as tap water.

In summary, the local tap water tested (Cleveland, Ohio) was found to be more appropriately fluoridated than bottled water, and was more pure than more than 20% of bottled waters. There is as yet no legislative protection for citizens to know the quality

of commercial bottled water. ■

Diet and Colorectal Adenomas

Source: Schatzkin A, et al. *N Engl J Med* 2000;342:1149-1155.

The epidemiologic basis implicating diet as a factor in the pathogenesis of colorectal cancer (CRC) is impressive. Not only do international studies and migration studies support such a role, animal studies show that manipulation of fat and fiber in the diet can alter the incidence of colonic tumors. Generally, ingestion of red meat and high dietary fat is associated with increased risk of CRC; vegetables, dietary fiber, and some micronutrients are associated with lower risk. The current study evaluated persons who had suffered an adenomatous polyp, a CRC precursor, to see if dietary alteration could reduce adenoma recurrence.

The Polyp Prevention Trial enrolled 2079 persons who had undergone colonoscopy and had resection of an adenoma, without evidence of CRC. Half of the group was assigned to a low-fat diet, high in fiber, fruits, and vegetables; the other half maintained their usual diet.

Dietary intervention reduced fat intake by almost 33%, but even persons in the usual diet group reduced their fat intake by about 6%. Overall, the mean absolute difference between the two groups was about 10%. Similarly, fruit and vegetable intake increased by about two-thirds in the intervention group, but changed only slightly in the usual diet group. All subjects underwent repeat colonoscopy four years later at the conclusion of the trial.

No difference in frequency of adenoma-

tous polyp recurrence was detectable between the two groups. Similarly, there was no difference in the number of large or advanced adenomas. CRC diagnosis subsequent to randomization was actually substantially greater in the intervention group than in the control (by more than twofold risk).

Schatzkin and colleagues conclude that dietary changes administered over four years do not demonstrate reduced likelihood of adenomatous polyp recurrence. ■

Anergy Testing and PPD?

Source: Slovis BS, et al. *JAMA* 2000; 283:2003-2007.

Probably the most common method of administration of tuberculin skin testing (PPD) includes application of control antigens to assess integrity of immune response and rule out anergy as a cause of a false-negative PPD test. For instance, as many as 20% of AIDS patients with active TB are PPD negative at presentation. Indeed, most persons with miliary TB are PPD negative.

Anergy may reflect immune compromise from a variety of sources. For instance, protein malnutrition is associated with anergy, as is major trauma, histamine, and calcium channel blocker treatment.

The use of anergy testing has not been proven and might even produce misleading information. In a population of HIV-positive persons (n = 623), mumps/candida anergic individuals were just as likely to be PPD positive as nonanergic individuals. As many as 20% of persons with active TB who are PPD negative maintain antigen

responsivity to other standard skin-testing antigens. In this scenario, clinicians might be falsely misdirected away from a correct diagnosis by relying on intact cutaneous reactivity to indicate likelihood of appropriate responsiveness to PPD. Slovis and colleagues conclude that the only helpful skin test in TB screening is a positive PPD, as a negative test does not exclude infection and requires further investigation in the setting of high clinical suspicion. ■

Monitoring Osteoporosis Therapy with Bone Densitometry

Source: Cummings SR, et al. *JAMA* 2000;283:1318-1321.

Bone mineral density (bmd) is often used as a surrogate marker of efficacy for osteoporosis treatments. Cummings and colleagues evaluated whether the small number of women who are reported to lose BMD during treatment with an active agent (alendronate or raloxifene, in this case) are indeed losing BMD, which should be consistent and continuous over time, or whether, with continued monitoring, these women would tend to regain bone mass, indicative of a regression to the mean (RTM) type effect.

Study subjects (n = 6588) were composed of participants in the Fracture Intervention Trial and Multiple Outcome of Raloxifene Evaluation Trial. Subjects had to have completed two years of treatment in the trials. Outcomes measured were hip and spine BMD at baseline, 12, and 24 months.

On average, treatment resulted in an increase of 2.2% in the hip and 4.5% in the spine BMD at the end of year 1. Of women who lost BMD during year 1, those with the greatest loss showed the steepest slope of increase BMD during year 2. Cummings et al comment that indeed individuals who have measurements disparate from the mean tend to demonstrate RTM effect when followed for longer time periods. One con-

clusion to be drawn is that treatment of osteoporosis with pharmacotherapy may still be continued even in persons who initially lose BMD, as most will reverse this trend with continued therapy. ■

Risks of Untreated Isolated Systolic Hypertension in the Elderly

Source: Staessen JA, et al. *Lancet* 2000;355:865-872.

The ascendancy of systolic blood pressure over diastolic as a predictor of adverse cardiovascular outcomes has only recently been popularized. Most recent meta-analyses have focused upon large accumulated data derived from prospective randomized trials that used diastolic blood pressure as the primary measurement tool. In the last decade, three large randomized trials of treatment for isolated systolic hypertension have each demonstrated cardiovascular risk reduction. The large amount of patient experience generated by these trials allows for commentary based upon a meta-analysis of trials limited to systolic hypertension.

Staessen and colleagues included older patient populations (age > 60) with isolated systolic hypertension from the SHEP, Syst-Eur, and the Syst-China trials. Additionally, persons with isolated systolic hypertension that participated in the EWPHE, HEP, STOP, MRC-1, and MRC-2 trials were included in the analysis.

Assessing data of these trials for patients followed for a median of 3.8 years (n = 15,693) demonstrated a total mortality reduction of 13%, cardiovascular mortality reduction of 18%, stroke reduction of 30%, and coronary event reduction of 23%. These favorable effects of treatment are similar to those achieved in the large body of diastolic based hypertension trials. This meta-analysis concludes that treatment of isolated systolic hypertension is of substan-

tial benefit in older patients. ■

Ciprofloxacin and Trimethoprim-Sulfamethoxazole for Acute Uncomplicated Pyelonephritis in Women

Source: Talan DA, et al. *JAMA* 2000; 283:1583-1590.

Randomized trials were able to establish that the traditional 10- to 14-day therapy used for lower urinary tract infection (i.e., uncomplicated cystitis in women) may be safely accomplished with as little as three days of appropriate therapy. Pyelonephritis is responsible for a substantial number of hospitalizations, with the traditional regimen being 14 days, with no randomized trials confirming efficacy of shorter regimens. Increasingly complex patterns of antimicrobial resistance, hospital use patterns, and cost efficacy monitoring support a trial to compare therapies for acute uncomplicated pyelonephritis (APN).

Subjects with APN (n = 378) were randomly assigned to treatment with either one week of ciprofloxacin 500 mg b.i.d. or two weeks trimethoprim-sulfamethoxazole 160/800 mg b.i.d.

The clinical cure rate for ciprofloxacin was statistically superior to that of trimethoprim-sulfamethoxazole (96% vs 83%). Adverse drug effects occurred to a similar degree among both groups, though there was a trend to more adverse effects among trimethoprim-sulfamethoxazole recipients. This study demonstrates the superiority of seven days of ciprofloxacin for APN, but results must be viewed as only applicable to women, since no men were included in the trial, and the pathology of APN in men may reflect both different pathogens and different etiologic factors resulting in APN. ■

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