

Clinical Briefs in Primary Care

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Evidence-based updates in primary care medicine

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Efficacy of Water Aerobics for Overweight and Obese Hypertensive Women

SOURCE: Cunha R, et al. Water aerobics is followed by short-time and immediate systolic blood pressure reduction in overweight and obese hypertensive women. *J Am Soc Hypertens* 2016;10:570-577.

Clinicians sometimes are concerned about the effect of exercise on blood pressure in hypertensive patients, primarily because of a well-recognized post-exercise hypotension phenomenon that can occur. Typically, hypertensive patients experience greater degrees of hypotension than normotensive patients. There is a paucity of evidence about whether hypotension occurs with similar frequency, intensity, and duration after water aerobics as it does during exercise on land. An additional attractive feature of water aerobics is that overweight and obese subjects sustain less joint stress. Injuries associated with water aerobics are much less common than during land exercise.

In a small crossover study of overweight and obese hypertensive women (n = 18), participants were randomized to either water aerobics (performed at 70-75% of predicted maximum heart rate for 45 minutes) or control (sedentary pool-side participation). Blood pressure was measured at 10-minute intervals three times after the 45-minute interval of exercise (or sedentary activity). Participants then crossed over so that the previously sedentary group performed aerobic exercise, and vice versa.

In study subjects, post-exercise changes

did not occur in diastolic blood pressure. Systolic blood pressure changes were small (1-3 mmHg decline) and not of clinical relevance. Clinicians who provide exercise advice to overweight and obese hypertensive patients should find some reassurance about the safety of aerobic exercise in this population. ■

What's the Best Way to Remove a Tick?

SOURCE: Belli AA, et al. Revisiting detachment techniques in human-biting ticks. *J Am Acad Dermatol* 2016;75:393-397.

Ticks transmit pathogens to victims around the globe. This particular data set was provided by a group of Turkish physicians, for whom the necessity to determine optimum tick removal technique was highlighted by a 2003 epidemic of tick-borne Crimean-Congo hemorrhagic fever that led to 300,000 tick-bite related admissions in one year.

Investigators studied four techniques — tweezers, freezing, lassoing, and card-detachment (a card with a narrow slit/channel into which a tick might be caught and removed) — among 160 patients presenting to the Dermatology Clinic at Haseki Training and Research Hospital (Istanbul). Except for the tweezer technique, all other methods were performed with commercial products specifically designed by the manufacturer to remove ticks.

There was great diversity in efficacy of tick removal, ranging from 0% (freezing), 7.5% (card-detachment technique), 47.5% (lassoing technique), and 82.5% (tweezers). The successful tweezer tech-

nique was simple: Grab the mouth parts, do not rotate, and pull off directly. ■

Topicals for Atopic Dermatitis: Calcineurin Inhibitors vs. Corticosteroids

SOURCE: Broeders J, et al. Systematic review and meta-analysis of randomized clinical trials (RCTs) comparing topical calcineurin inhibitors with topical corticosteroids for atopic dermatitis: A 15-year experience. *J Am Acad Dermatol* 2016;75:410-419.

Atopic dermatitis is a chronic disorder, usually beginning in childhood, that causes significant burden to patients because of unsightly dermatitis, pruritus, and lichenification. Unfortunately, there is no cure for atopic dermatitis; rather, numerous interventions are available to provide reduction in symptoms, or at least temporary periods of remission.

The mainstay of pharmacotherapy for atopic dermatitis has been topical corticosteroids for more than three decades. Although highly successful, concern about local cutaneous toxicity of topical corticosteroids, as well as the potential for systemic effects on the hypothalamic-pituitary-adrenal axis when a high-potency topical corticosteroid is used, has prompted exploration of alternative treatments. Within the past decade, topical calcineurin inhibitors (i.e., pimecrolimus, tacrolimus) have demonstrated efficacy for atopic dermatitis. Because of largely hypothetical concerns about immune dysregulation that might occur with topical calcineurin inhibitors (TCI), current guidelines reserve TCI for second-tier treatment, such as steroid-refractory atopic dermatitis or pa-

tients intolerant of topical corticosteroids. Broeders et al compared the efficacy of topical corticosteroids with TCI through a meta-analysis of 12 trials that compared topical corticosteroids to TCI (n = 6,954) in adults and children presenting with atopic dermatitis. Overall efficacy of TCI was slightly greater, but it caused higher rates of non-serious adverse events. The authors concluded that topical corticosteroids should remain the first-line treatment for atopic dermatitis. ■

Empagliflozin Improves Renal Outcomes in Type 2 Diabetes

SOURCE: Wanner C, et al. Empagliflozin and progression of kidney disease in type 2 diabetes. *N Engl J Med* 2016;375:323-334.

Sodium glucose transporter 2 (SGLT2) inhibitors are the newest class of medications approved to treat type 2 diabetes (T2DM). Although there have been isolated reports of acute kidney injury associated with SGLT2 treatment, FDA registration trials have noted a short-term decline in glomerular filtration rate, which returns to normal over ensuing weeks. The EMPA-REG trial (n = 7,020) was performed primarily as a cardiovascular

safety trial for the SGLT2 inhibitor empagliflozin, as mandated for all new pharmacologic agents indicated for T2DM. In addition to the cardiovascular risk reduction reported in earlier published EMPA-REG results, renal outcomes were another important pre-specified endpoint.

New or worsening nephropathy was meaningfully reduced by empagliflozin treatment (hazard ratio = 0.61, a 39% reduction). Similarly, the incidence of a doubling of serum creatinine was reduced by almost half, and likelihood of initiation of renal replacement treatment was reduced by more than half.

In addition to favorable effects on glucose control and cardiovascular outcomes, treatment with empagliflozin was associated with meaningful reductions in adverse renal outcomes. ■

Motivational Interviewing Improves CPAP Adherence

SOURCE: Bakker JP, et al. Motivational enhancement for increasing adherence to CPAP: A randomized controlled trial. *Chest* 2016;150:337-345.

Even though obstructive sleep apnea (OSA) causes immediate (daytime sleepiness, memory impairment, decreased functionality) and long-term (hypertension, increased cardiovascular event rate) problems, it may come as a surprise that the majority of users of continuous positive airway pressure (CPAP) machines do not even achieve four hours of use nightly, on average. This is particularly concerning since benefits of CPAP on adversities related to OSA are most substantial when using CPAP for 5.5 hours or more per night.

Motivational interviewing is a technique that has been successfully employed to improve outcomes ranging from smoking cessation to compliance with antihypertensive medication. Practitioners of motivational interviewing believe patients naturally often feel some ambivalence about interventions offered to them and that by helping the patient identify such ambivalence, steps can be taken to address obstacles to success. Central to the mechanism of motivational interviewing success is the role of the interviewer as facilitator rather than director. That is, patients are encouraged both to identify their own sources of ambivalence and also to explore which obstacles they might wish to address, as well as how they might best address them. Consider-

ing that the textbook explaining motivational interviewing (Miller WR, Rollnick S. *Motivational Interviewing: Helping People Change*. Third Edition. Guilford Press; 2012) encompasses more than 400 pages, the above explanation obviously is a dramatic over-simplification. Nonetheless, practitioners of motivational interviewing techniques (psychologists, physicians, and other clinicians) often find it a useful tool.

In a 12-month, randomized, controlled trial of motivational interviewing vs. placebo (n = 83), Bakker et al found that recipients of motivational interviewing demonstrated (on average) more than 90 minutes greater utilization of CPAP per night than those in the placebo group. This benefit was achieved through two in-person, hour-long motivational interviewing sessions with a psychologist, followed by six phone sessions over 32 weeks (10-30 minutes each) with the same psychologist. ■

Patients Make Multiple Errors in Inhaler Use

SOURCE: Sanchis J, et al. Systematic review of errors in inhaler use: Has patient technique improved over time? *Chest* 2016;150:394-406.

Despite various technical advances in inhaler devices, the skill with which patients actually use such devices has shown little improvement over four decades. Certainly, most clinicians have experienced or will experience suboptimal outcomes attributable to non-nefarious misuse of intended treatments.

Inhalation devices include metered dose inhalers (MDI), breath-activated MDIs, dry powder inhalers, and MDIs with inhalation chambers. Sanchis et al reported on data from patients in 144 publications about observed inhaler technique (n = 54,354). Although the steps for each device varies, errors in use (failure to place teeth/lips on mouthpiece, failing to fully exhale before inhalation, failure to breath-hold after medication inhalation, etc.) were the rule rather than the exception.

Only 31% of users exhibited correct inhaler technique, with an equal number demonstrating poor technique. The authors documented that skillfulness of technique has not improved over 40 years of observation. Obviously, something has to change in the process of educating patients about inhaler technique if clinicians expect different results in the future. ■

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