Science and Clinical Potpourri for Your Life and Your Practice

Asthma Drug May Thwart Parkinson Disease


Anesthesia providers are familiar with salbutamol as a rescue agent for asthma-related bronchospasm. What we may not appreciate is that it may have another intriguing application: It may protect against Parkinson disease (PD).

A recent study reveals that users of salbutamol at relatively high doses were about half as likely to develop PD as those who did not. Researchers at Harvard Medical School were looking for compounds that would suppress the formation of alpha-synuclein which accumulates in certain brain cells and greatly impairs, even killing them. One thing led to another, and in searching out large prescription databases researchers noted an intriguing finding that revealed the apparent protective effect of salbutamol.

Researchers noted that the findings were quite serendipitous and had “come out of the blue,” with the effect on salbutamol on alpha-synuclein being rather profound. The findings are generating a great deal of interest in the neurology domain and given that drugs like salbutamol are not engineered to enter the brain (at this time), work in that direction, or seeking like-acting drugs, has promise to make a difference in those whose lives are destined to be affected by PD.

A Novel Therapy to Protect Diabetic Bones


It is well appreciated that the drugs used to manage diabetes exert a two-edged sword effect, in that while helping to control the condition, they seem to impair the activity of cells that produce bone, leaving the patient prone to fractures and osteoporosis. Playing off research that demonstrated that a high-fat diet causes mice to produce bone that contains more fat and less bone due to high levels of leptin led Scripps Research Institute researchers to feed genetically altered and normal mice a high-fat diet. The animals that were genetically altered to have no IP6K1 (that is, they ‘knocked out’ that gene) developed fewer fat cells in their bones than their normal counterparts.

The next step was to develop a drug to achieve the same effect in the “normal” mice. The new drug, a IP6K1 inhibitor, protected the mice from the detrimental effects of a high fat diet. The animals that were genetically altered to have no IP6K1 (that is, they ‘knocked out’ that gene) developed fewer fat cells in their bones than their normal counterparts.

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Consensus Statement on Use of Ketamine in Mood Disorder Therapy


A growing body of literature reveals that ketamine, a drug used widely in surgical anesthesia care, when administered in sub-anesthetic doses, provides immediate onset antidepressant effects in those with treatment-resistant major depression. Typical dosing is 0.5mg/kg IV administered over a period of 30-60 minutes. While the use of ketamine for this indication is off-label and to date, has not been extensively studied in well-controlled settings, the Council of Research Task Force on Novel Biomarkers and Treatments of the American Psychiatric Association released a consensus statement on the use of ketamine in mood disorders. This consensus statement details which patients may benefit from the use of ketamine, what the appropriate treatment setting entails, what the dosing should be, and discusses potential safety issues. This published consensus statement has many implications for providers who administer the drug (or who may plan to do so) in this patient population. If you are involved in the use of ketamine in treating mood disorders, or are planning to make this part of your practice, this is an essential document for you to read.

American Association of Blood Banks: Guidelines for Transfusion

The FDA published a statement that thermal regulating systems used during surgery result in less bleeding, faster recovery times, and decreased risk of infection for patients. This was prompted by their understanding that some health care providers (including anesthesia providers) were reluctant, or not using at all, such systems during surgical procedures due to concerns of a heightened risk of surgical site infection. The FDA conducted an extensive review of available information and concluded that they were unable to identify a consistently reported association between the use of forced air thermal regulating systems and surgical site infection. The FDA continues to recommend the use of thermoregulating devices (including forced air thermal regulating systems) for surgical procedures when there is a clinical indication for doing so. Furthermore they indicated that not using these devices may cause adverse health consequences for patients during the postoperative and recovery process.

To determine if there is an increased risk of surgical site infection when forced air thermal regulating systems are used during surgery, the FDA collected and analyzed data available to date from several sources, including medical device reports received by the agency, information from manufacturers and hospitals, publicly available medical literature, operating room guidelines, and ventilation requirements. The FDA plans to continue to actively monitor this situation and will update this communication if significant new information becomes available. If you wish to follow-up or have specific questions about the FDA statement, you can contact CDRH’s Division of Industry Communication and Education (DICE) at DICE@FDA.HHS.GOV, 800-638-2041, or 301-796-7100.

**National Institutes of Health’s Ambitious, Domestic Health Study: The All of Us Study**

Sept. 8, 2017.

This largest, and most costly national health study is facing enormous complexities as it attempts to link genetic profiles, lifestyle, and health. The vision for this study began 3 years ago with the goal to eventually enroll 1 million Americans to help define how our behaviors (which are modifiable), along with our genes (which are a bit harder to modify!) play out to produce our state of health. The original expectation was to enroll at least 10,000 participants to pilot test the program, ensure the biobank was up to the task, and work out logistics. As of this writing, there are only 2,000 subjects enrolled.

The study is funded at $230 million and projected to cost $4.3 billion over its 10 year projected duration. The study is the brainchild of none other than Francis Collins, the NIH director, and to some degree models what is already going on in other countries, most notably Iceland and England. Volunteers, who are at least 18 years of age, provide blood and urine samples and undergo screening during a 1-hour clinic visit, with a $25 “stipend” provided them at that time. They complete 3 online surveys and must give consent to the investigators to access their electronic health records so that they can be tracked over time. Consent to access genetic information is a key component of the study. Much needs to be done, but if the study plays out (despite overcoming many obstacles) as planned, enrollment should soar in 2018 and the most ambitious general health study in U.S. history may provide information that to date we do not have. So, stay tuned for updates!

**How Safe Is Transoral Endoscopic Thyroidectomy?**

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Optimizing patient safety is (hopefully) a universal goal. Cutting-edge efforts to advance surgical care may sometimes find itself venturing into realms where safety might be compromised. Thus the need exists for carefully interrogating new surgical approaches in a
systematic manner. In this study, comparing open thyroidectomy with a transoral approach, investigators examined both efficacy and safety of the newer approach. A transoral approach to the thyroid gland involves putting the patient in the supine position with slight neck extension under general anesthesia with nasotracheal tube followed by specific antibiotic administration, 3 laparoscopic ports at midline, and at the lateral junction between canine and first premolar teeth under the lower lip at the oral vestibular area. The working space is created down to the sternal notch with the lateral border at the sternocleidomastoid muscles and eventually retracted to expose the thyroid. The study included 425 patients aged 16-81 who underwent the transoral approach, with 422 reported to have a “successful” outcome, the other 3 converting to the traditional open approach. No patient suffered a recurrent laryngeal nerve injury, but 3 had transient mental nerve injury. Operative time was longer in the oral approach by an average of 21 minutes and pain ratings by visual analog scale were slightly lower. This procedure joins a growing list of unconventional surgical approaches. Will you see this procedure at your facility? Time will tell.