LABRIX Newsletter

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When depression hurts

According to the Centers of Disease Control and Prevention, an estimated 1 in 10 U.S. adults report depression and, over the last two decades, antidepressant use in the U.S. has increased nearly 400%. An average of 65% of depressed individuals also report pain, and this pain in turn may be a major contributor to the development of depressive symptoms in this population. According the American Pain Foundation, approximately 32 million people in the U.S. report having had pain lasting longer than 1 year. When chronic pain is present, a cycle perpetuating feelings of depression may occur. Chronic pain can cause sleep disturbance resulting in fatigue, low productivity, increased stress, and overwhelm at the challenges of life resulting in, or exacerbating, feelings of depression and irritability.

More often thought of when pertaining to mood and cognition, neurotransmitters also play an integral role in pain processing and modulation. Of particular note are serotonin and norepinephrine. Depending on the action site as well as both the cell and receptor type, serotonin has the potential to elucidate both excitatory (hyperalgesic) and inhibitory (analgesic) actions. For example, in peripheral tissues, serotonin sensitizes afferent nerve fibers, contributing to inflammatory and neuropathic pain. When acting on specific receptors in the trigeminal nerve system, serotonin may contribute to chronic headaches. Conversely, serotonin release in the central nervous system modulates pain transmission by inhibiting incoming sensory activity. Depletion of serotonin blocks analgesic effects.

Like serotonin, norepinephrine's role in pain is dependent upon its action sites. In the CNS, norepinephrine may have analgesic actions in chronic pain when stimulating specific areas of the brain and spinal cord. In peripheral tissues, norepinephrine may perpetuate pain via its vasoconstriction effects. Vasoconstriction results in increased muscular tension and lactic acid (pain causing) production within the tissue. Vasoconstriction also results in decreased oxygen flow to tissues, resulting in slowed removal of lactic acid and thus, persistent pain. Norepinephrine –evoked pain has been implicated in fibromyalgia and may be due, at least in part, to these mechanisms.

Pharmacologic agents that target serotonin and norepinephrine are often employed as treatment modalities for chronic pain. These drugs decrease reuptake of serotonin and norepinephrine, increasing their availability at selective neuronal synapses. These pharmaceutical options may be poorly tolerated by some, can result in

unwanted side effects for many, and may be cost-prohibitive. An alternate approach is targeted amino acid therapies to address endogenous elevations and/or depressions of these neurotransmitters and promotion of balance within their pathways. These imbalances can be accurately and easily identified using Labrix's urinary neurotransmitter testing. The identification of neurotransmitter imbalance is essential in developing appropriate and successful treatment interventions for this population.

References:

- *Muller CP, Jacobs BL. Handbook of Behavioral Neuroscience. Volume 21, Pages iv-xv, cp1-cp14, 3-818 2010.*
- *Centers For Disease Control and Prevention. Available at: http://www.cdc.gov/features/dsdepression/. Accessibility verified 3/17/14.*
- *Martinez-Lavin M, Vidal M, Barbosa R, et al. Norepinephrine –evoked pain in fibromyalgia. A randomized pilot study. BMC Muculoskelatal Disorders 2002, 3:2 .*
- *Mease PJ. Further strategies for treating fibromyalgia: the role of serotonin and norepinephrine reuptake inhibitors. AM J Med. 2009 Dec; 122.*
- *Pertovaara A. Noradrenergic pain modulation. Prog Neurobiol. 2006 Oct; 80(2):53-83.*

Important insurance information

Labrix continues to monitor changes in billing and insurance and updates it's policy regularly. Click here to see the current information on Billing and Insurance.

REGISTRATION IS OPEN!

Labrix CEO and Associate Medical Director Dr. Erin Lommen and Staff Physician Dr. Robyn Kutka present the fundamentals of hormone balancing, broken down into simple core concepts and related in a single day of engaging presentations and discussions. This event is designed for the provider who is new to the field of hormone balancing or is looking to brush up on the basics.

Join us for this 8 hour training and *leave with the tools and knowledge necessary to:*

- Identify patients who would benefit from hormone balancing
- Understand the roles of major sex and adrenal hormones in men and women
- Appreciate the relationships between the various hormones and the entire endocrine system
- Recognize the role that sex and adrenal hormones play in several prominent disease processes
- Treat hormone imbalances with nutritional supplements, botanical medicines and BHRT

This event will be held on **Saturday, April 5, 2014** at:

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Courtyard Chicago Downtown/River North

Labrix has secured a room block at the rate of $199/night.

If you are serious about adding this powerful tool into your practice, register to attend and secure your seat.

Registration is $150 and following successful completion of the course, you will receive a $100 credit on your testing account.

This event is a non-CME event.