Potential new therapy for painful bladder syndrome with a pregnancy hormone, human chorionic gonadotropin

Painful bladder syndrome, also called interstitial cystitis, is a painful debilitating chronic bladder disease that primarily affects 40-60 year old women. Women of all races, ethnic and socioeconomic backgrounds are susceptible to the disease. The symptoms include lower abdominal/pelvic discomfort, pain, increased urination frequency, urgency, nocturia, that substantially reduce the quality of daily life. These symptoms vary with the person and from time to time in the same person. In severe cases, the intense pain can persist 24/7 for more than 2 years.

Inner cell lining of the bladder gets damaged in the disease. As a result toxic substances in urine leak into the bladder wall, causing inflammation, irritation, scarring and stiffening. The stiffened bladder has a reduced capacity to hold urine and cause pain during urine accumulation and voiding. Living with painful bladder syndrome is extremely difficult because of pain and suffering, staying home, social isolation, emotional troubles, sexual intimacy problems, depression and sleep deprivation. The disease comes with very high economic burden. For example, total annual medical care costs per person can exceed $7,000, not counting the income loss from missed work.

Many factors such as, bladder trauma from pelvic surgery, bladder over distension, dysfunctional pelvic floor muscles, autoimmunity, infections, primary neurogenic inflammation, spinal cord trauma could cause painful bladder syndrome. Multiple therapies that exist can only provide a symptomatic relief. However, they do not work for everyone and the symptoms usually return after few months. Among the therapies, U.S. Food and Drug Administration has approved only pentosan polysulfate sodium, sold under the brand name of Elmiron, for oral use. It is effective in providing relief against pain, urgency and frequency, but not nocturia after several months of use. Pentosan polysulfate sodium use can increase the risk of bruising/bleeding from the nose and gums, because of its weak blood thinning properties. The other common side effects include diarrhea, nausea, upset stomach, bloody stools, headache, hair loss, rash and dizziness.

Uterus and urinary bladder are homologous organs, share a common embryological origin and hollow in nature with overlapping cellular and molecular networks. The findings that inner cell lining of the bladder contains functional receptors for pregnancy hormone, human chorionic gonadotropin, and the painful bladder syndrome symptoms improve during pregnancy and during infertility treatments with hCG, led to us to suggest that it is likely to have a therapeutic potential.

We propose exploring this potential in clinical trials. Of course, one cannot be sure until tested that human chorionic gonadotropin has this potential. However, there is a good chance it does because of the scientific data/logic. In fact, there is more scientific basis in favor of human chorionic gonadotropin than for pentosan polysulfate sodium. Men also can get painful bladder syndrome less frequently than women. We recommend testing human chorionic gonadotropin for men as well. Human chorionic gonadotropin is already cheap and can even be made cheaper by scaling up

the production.

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