Environmental Medicine Update

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Detoxification as a Treatment for Endometriosis: Clinical Cases Report

Introduction

Endometriosis is a common condition affecting around 10% of women. It is characterized by the presence and growth of endometrial cells outside the uterus, called implants. Endometriosis is a hormonally responsive condition and is a common cause of dysmenorrhea and infertility. Endometriotic implants contain estrogen, progesterone, and androgen receptors.[1] Risk of endometriosis seems related to the amount of menstrual flow. Women with a short menstrual cycle (<27 days), longer menstrual flow (>7 days), and spotting before the onset of menses are at greater risk for developing endometriosis.[2]

The exact cause of endometriosis is unclear. A common theory is retrograde menstruation. This is where endometrial cells flow backwards through the fallopian tubes and land on pelvic organs, where they start to grow.[3] Another theory is metaplasia, or the changing from one type of tissue to another.[4] There appears to be a genetic link as well. Women with first-degree relatives with endometriosis are predisposed to develop the disease, develop symptoms earlier, and have more severe manifestations.[5] Inflammatory cytokines are elevated in women with endometriosis, suggesting immune dysfunction plays a role in the pathogenesis.[6] Other causes of endometriosis include iatrogenic, where endometriosis develops after gynecological procedures, abdominal surgery, or cesarean sections. Diet is linked to endometriosis. One study found that there was a 40% decreased risk of endometriosis in women with higher consumption of green vegetables and fresh fruit and an 80% increased risk in women who ate high amounts of beef and other red meats.[7]

Environmental Factors

The influence of environmental factors on endometriosis has been an area of great interest and research of late. Chemicals in the environment that women are exposed to through diet, cosmetic and grooming products, plastics, and other common sources are known to alter hormones in the body. These compounds are called *hormone-disrupting* or *endocrine-disrupting* compounds. Many chemicals have hormone-disrupting properties, including bisphenol A found in canned foods and plastic bottles, organochlorines found in food and water, phthalates found in plastic food storage containers and cling wrap, pesticides and polycyclic aromatic hydrocarbons found in food, solvents found in paint, and chemicals found in some household cleaning products. Even heavy metals such as cadmium and mercury are shown to have endocrine-disrupting properties.[8]

The role of hormones in the pathogenesis of endometriosis is clear, and new evidence has directly linked hormone-disrupting chemicals to endometriosis. Organochlorine compounds such as dioxin and polychlorinated biphenols (PCBs) contaminate our food and water, and women are exposed to low doses on a daily basis. Deep endometriotic nodules are associated with high blood levels of dioxin and PCBs.[9] Phthalates are used in the plastic industry and are in everything from plastic water bottles with the #3 on the bottom to plastic food storage containers. A recent study showed that 55 women with endometriosis had elevated blood levels of phthalates compared with controls.[10]

Phthalates are not the only chemicals in plastic products linked to endometriosis. A study found that over 63% of women participants with endometriosis had BPA in their blood compared with healthy women.[11] Using data from the National Health and Nutrition Examination Survey (NHANES), researchers found that women with endometriosis had higher blood levels of cadmium than women without endometriosis.[12] Cadmium is common contaminate of non-organic vegetables and fish. Plants absorb cadmium from soil, and fish from the water that they live in.

Endometriosis Treatment

As the evidence grows linking hormone-disrupting compounds to endometriosis, the question is, what can