

## Women Face Unique Asthma Challenges

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### *Higher prevalence, severity and unique features suggest different management strategies*

Women suffer asthma more frequently than men, they often have more severe disease, and they experience unique features associated with their reproductive system. These differences, which suggest different management strategies, are often underappreciated, said National Jewish Health pulmonologist Esther Langmack, MD, Thursday morning during a presentation at the 31<sup>st</sup> Annual National Jewish Health Pulmonary and Allergy Update at Keystone, Colorado.

"We have come to appreciate gender differences in some diseases, such as cardiovascular disease and autoimmunity," said Dr. Langmack. "We are just beginning to recognize and appreciate those differences in asthma, which seems related to genetic and hormonal differences between the two sexes."

Among children, boys actually have asthma about twice as often as do girls of the same age. Starting at about puberty that ratio begins to reverse, peaking at about 40 years of age, when women are twice as likely to suffer asthma as are men of the same age. Overall in the United States, about 8.8 percent of females have asthma, while about 6.4 percent of males do.

Women have more severe asthma. They visit their doctors and emergency departments more often than do men. Women are hospitalized at a rate of about 19 per 100,000 people versus 14 per 100,000 people for men. About 1.6 women per 100,000 die of asthma versus 1.1 per 100,000 for men.

Exactly why this occurs is not well understood, but hormones associated with the reproductive cycle are prime suspects. The change in prevalence that occurs around puberty is one indicator that hormones play a role. Laboratory studies have also implicated estrogen in increased airway inflammation and testosterone with reduced airway reactivity.

Genetic differences may also play a role. Several specific genes are associated with asthma in females, but not in males. There may also be sex-specific differences in the regulation and expression of genes that could increase asthma prevalence and severity among women.

The menstrual cycle offers additional evidence for the role of hormones. Thirty to 40 percent of women experience an increase in asthma symptoms at specific times during their menstrual cycle, most commonly four to five days before the onset of menstruation.

Dr. Langmack usually asks her female asthma patients if they have noticed a cyclical nature to their asthma symptoms. While some are aware of it, others realize that might be the case only upon being asked. Dr. Langmack suggests that women who suspect their asthma symptoms may be cyclical keep an asthma diary, recording medication use, symptoms and peak flow numbers to see if a pattern related to menstruation becomes evident.

For women who do suffer asthma symptoms associated with their menstrual cycle, the most effective treatment is to get their asthma under control-- to see a doctor, develop an asthma management plan and to stick with it. Asthma patients need to remember to regularly take their controller medication in order to keep their symptoms under control.

If good asthma management does not stop the cyclical asthma symptoms, patients might consider stepping up their treatment regimen a few days before the usual onset of more severe symptoms. Patients should talk to their doctor who can advise them about appropriate increases in therapy.

Pregnancy is another reproductive event that can alter asthma, although not in a consistent manner. About one-third of pregnant women suffer worse asthma during pregnancy, one-third see no difference, and one-third have fewer asthma symptoms during pregnancy. For those whose asthma changes during pregnancy, most revert to their pre-pregnancy status after giving birth.

Among women whose asthma worsens during pregnancy there is some resistance among patients and even some doctors to increasing medications for fear of any damage it may cause the fetus. They should not be concerned, said Dr. Langmack.

"There have been several large studies that have shown a clear benefit to adequately treating the asthma during pregnancy," said Dr. Langmack. "Not treating the asthma, and possibly depriving a growing fetus of oxygen, poses a much greater threat to a child's well-being than do possible side effects from properly selected medications."

Dr. Langmack spoke at the 31st Annual National Jewish Health Update on Allergy and Respiratory Diseases, a four-day conference at which National Jewish Health experts discuss the latest advances in diagnosis and treatment of patients with allergies, asthma, autoimmune and pulmonary diseases.

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