Broadspire®
Medigram

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Work related? Probably not!

Chronic Obstructive Pulmonary Disease (COPD)
Asthma
Migraine

TAKING OUR PULSE

An occupational illness is any abnormal condition caused by exposure to environmental factors associated with employment. Determining a medical condition's causal relationship to the workplace is a critical issue in occupational health, since this determination impacts treatment as well as the financial responsibility for the cost of treatment. This often includes medication management, repeated imaging evaluations, and follow-up visits. These are chronic illnesses which require both short term and long term treatment. The causality determination must take into consideration three key factors:

- Objective clinical findings
- Specific workplace exposures
- Evidence-based-medicine supportive of (or not) the exposure of concern and the condition

Are diagnoses such as chronic obstructive pulmonary disease (COPD), asthma and migraine causally related to work?

JUST WHAT THE DOCTOR ORDERED

COPD is a lung disease that is often a combination of chronic bronchitis and emphysema. COPD typically progresses over time. The damage to the lungs is not fully reversible, and prevention of disease progression is the treatment goal. Long term cigarette smoking accounts for up to 90% of cases and, although rare, COPD can also be caused by long term exposure to chemical fumes, vapors and dust in the workplace. Approximately 5% of individuals with COPD have a genetic disorder that causes low levels of a protein essential to liver and lung function. When suspecting occupational lung disease, current and past pulmonary symptoms must be evaluated as well as detailed exposure history. Studies suggest a link between specific occupational exposures for coal miners, hard rock miners, tunnel workers and concrete manufacturing workers. However, even a "moderate" smoking history has comparable effects on COPD risk. COPD affects 5% (some 16 million people) in the United States. The economic impact is staggering and was estimated to be $49.9 billion in 2010 with $29.5 billion related to direct health care costs.

Occupational asthma is primarily an allergic disease. A definitive diagnosis is based on timing of symptoms, the degree to which the symptoms resolve when the individual is away from the work environment and recur with return to the work place and later environmental exposures. Extensive lists of asthma inducers are available and a careful review of available Material Safety Data Sheets can help to identify chemical agents that a worker has been exposed to. Many of us have non-occupational asthma, which affects 5-10% of the general population, and may be related to upper respiratory infections, genetic predisposition, allergy, psychological stress, and may be exercise or drug induced. Occupational asthma is defined as asthma caused by, as opposed to aggravated by, workplace exposures. An asthma-specific Job Exposure Matrix (JEM) is a useful tool for exposure assessments. A pre-existing asthma condition may be exacerbated or aggravated by exposure to workplace materials, but this is not considered "occupational asthma". In both COPD and occupational asthma, type, intensity and duration of exposure, as well as genetic susceptibility, co-morbid conditions, and lifestyle factors and habits, must be evaluated carefully.

Migraine headaches are unique and distinctive headaches. Researchers now subscribe to a neurovascular causation for migraine. These headaches seem to be triggered by disturbances in the hypothalamic and limbic areas of the brain, related to a particular neurotransmitter, serotonin. It occurs in 12% of the general population; is 3 times more prevalent in women; usually begins prior to age 30; is aggravated by pregnancy; and has a strong genetic basis (one is 2-4 times more likely to get migraine if a first-degree relative has it). Post-traumatic migraine headaches are rare, although may result from mild head injury. There is some evidence that head trauma (i.e., following motor vehicle accidents, falls, accidents and assaults) and blast exposure may trigger the migraine process in an individual who previously did not have migraines, and may increase the severity of these headaches in those with pre-existing migraine conditions. In addition to migraines, other types of posttraumatic headaches include tension type headaches, occipital neuralgia, cluster headaches, low cerebrospinal fluid pressure headaches, whiplash and cervicogenic headaches. Some studies suggest litigation and financial settlement issues impact diagnosis and treatment and as such, must be considered carefully. Migraine headaches are very costly primarily due to indirect costs attributable to reduced productivity and work effectiveness. Scientific literature does not support the relationship of airborne elements (e.g., dust, mold, solvents, etc.) to the development of migraine headaches.

KEY TAKE AWAY POINTS

In general, COPD, asthma and migraine headaches are **not occupational conditions.** A high threshold of evidence is needed to confirm potential occupational causality. Broadspire's PRS panel physicians, including pulmonary and neurology physician review specialists, can assist you in evaluating causality issues. Be aware that there may not always be a close correlation between scientific evidence and popular opinion. Even a moderate smoking history significantly increases the risk for COPD. True migraines following head trauma are rare, and environmental factors have no relationship to migraine headaches.

CIRCULATING IN THE PRESS

In the February 13, 2014 New England Journal of Medicine, an article authored by Susan M. Tarlo M.B., B.S., and Catherine Lemiere, MD included the following:

Occupational asthma has been reported in a minority of workers exposed to most known sensitizing agents (usually 10% or less among current workers in cross-sectional studies)...There is a discrepancy between the rates of asthma diagnosed by a health professional as being work-related (4.7% of all new asthma cases) and rates that include self-reported cases of work-related asthma (18.2% of all new asthma cases).