

Evaluating Asthma in the Workplace: Part 1 -- Framework

Your patient presents with symptoms of asthma that seem to be related to work. Does your patient have asthma? Is it work-exacerbated asthma (WEA) or occupational asthma (OA)?

Guidelines issued by the Canadian Thoracic Society (Tarlo, Boulet et al. 1998) and the American College of Chest Physicians (Tarlo, Balmes et al. 2008) provide a framework to evaluating asthma in the workplace.

Asthma in the workplace may be caused by work or exacerbated by work. New asthma may be occupational or pre-existing subclinical asthma exacerbated by work. Occupational asthma is categorized according to (1) presence of a latency period (sensitizer induced), or (2) absence of a latency (irritant induced; and pharmacologically induced – e.g., organophosphate pesticides). Irritant-induced asthma (Reactive Airway Dysfunction Syndrome) occurs following a single intense exposure to gas, vapour or smoke. Symptoms start within 24 hours of exposure. Low-Intensity Chronic Exposure Dysfunction Syndrome is the more proper term for persons with symptoms following low-intensity multiple exposures (Bernstein, Chan-Yeung et al. 2006).

Sensitizer-induced asthma is categorized into allergic (IgE) and non-allergic (non-IgE). Latency for allergic sensitization is generally longer than for non-allergic. 40% of persons with non-allergic sensitization will develop symptoms within the first year of exposure compared to 18% of persons with allergic sensitization. High molecular weight (HMW) agents tend to induce allergic sensitization. Smoking increases the risk of sensitization from HMW agents. Low molecular weight (LMW) agents tend to induce non-allergic sensitization. HMW agents include: metals and metal salts, enzymes, drugs, insects, plants, animals and chemicals. LMW agents include: metals, enzymes, drugs and chemicals.

Persons with work-related asthma caused by work need to avoid further exposure – some indefinitely, others for until symptoms are well controlled. Some may have to be removed from the workplace for a period of time. Those with work-exacerbated and irritant-induced asthma can continue working in the workplace if exposure is reduced (Tarlo and Liss 2003).

Part 2 will cover investigation. A useful resource is the Center for Asthma in the Workplace (Dr. Jean-Luc Malo; Dr. Manon Labrecque), Hôpital du Sacré-Coeur, Université de Montréal. Payment of referral to or consultation with the Center requires prior authorization. Please contact WorkSafeNB if you need assistance to sort out asthma in the workplace.

Douglas Margison, BSc, MD, CCFP(C), MBA, FCBOM

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References:

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- Tarlo, S. M., L. P. Boulet, et al. (1998). "Canadian Thoracic Society guidelines for occupational asthma." Can Respir J.
- Tarlo, S. M. and G. M. Liss (2003). "Occupational asthma: an approach to diagnosis and management." CMAJ **168**(7): 867-71.