Diagnosis and Management of Work-Related Asthma:
A Physician Pathway for Diagnosis and Management of Work-Related Asthma

Web supplemental material for Diagnosis and Management of Work-Related Asthma: American College of Chest Physicians Consensus Statement

DEFINITIONS

Work-related asthma includes:

- **OCCUPATIONAL ASTHMA (OA) [asthma caused by work], due to:**
  - **a work sensitizer,**
  - **or a high irritant exposure,**
- **WORK- EXACERBATED ASTHMA (WEA), which is work induced exacerbation(s) of new or concurrent asthma.**

DIAGNOSIS

1. Suspect work factors in all adult asthmatics.

2. Carefully document occupational history:

- Occupation:
  - current (any change in process/ new chemicals etc);
  - and at time of asthma-onset and/or worsening.
- Any of following *work-related symptoms*:
  - Worse when working (e.g. at work, after work if delayed symptoms);
  - Better away from work (e.g. weekends or holidays);
  - Asthma began with a work incident/accident;
  - Asthma worse with work exposures.

  If yes to any of above work-related symptoms, obtain more detail on work exposures and possible temporal work associations with symptoms, including any nasal, eye and skin symptoms, as well as frequency of symptoms, use of respiratory protective measures, and symptoms in co-workers.
- History of previous asthma, allergic rhinitis in childhood or adult life.

3. Physical examination:

- General physical exam with focus on skin, upper and lower respiratory systems.

4. Request copies of MSDSs and/or other exposure information to review. Investigations/ diagnostic evaluation:

a) Confirm asthma:

- Spirometry pre- and post-bronchodilator;
- and/or methacholine challenge;
- perform tests at the time of current or recent symptoms (e.g., within 24 hours after typical symptoms at work), stopping bronchodilators when possible for an appropriate time before testing.

b) Perform work-related tests:

- *Serial peak expiratory flow readings* at home and work- at a minimum performed in triplicate 4 times a day e.g., pre-work shift, mid-shift, post-shift and bed-time, with similar frequency and times when off work and with concomitant recordings of exposure, symptoms and medications (**see example of peak flow sheet,** modified with permission from original by Dr. FE Hargreave**)**
- Consider serial methacholine challenges at the end of a workweek and after a period off work, preferably at least 10 days off work, especially if sensitizer OA is considered.
- Obtain immunologic tests: skin prick tests for common allergens and work allergens, if available, to identify atopy and/or specific IgE to work sensitizer. Skin prick tests are preferred but serum specific IgE tests are helpful in certain situations when available.
- If sensitizer OA is suspected, consider specific inhalation challenge (SIC) testing if other results are not feasible/not conclusive and if challenge facilities available**.**
- Consider referral to specialist in occupational lung diseases.

SUMMARY

Based on the occupational history and additional diagnostic studies, the physician should decide if the patient is likely to have OA or WEA. Additional diagnostic tests can increase the diagnostic certainty of OA or WEA. Although a diagnostic level of certainty; “more probable than not” is the standard for a compensation claim, a higher level of clinical certainty is preferred to allow correct patient advice as to further work exposures.

REFERENCE

Tarlo, S.M., Balmes, J., Balkissoon, R., Beach, J., Beckett, W., Bernstein, … Heitzer, J. (2008). Diagnosis and management of work-related asthma: American College of Chest Physicians Consensus Statement. *Chest***,** 134(3), 1S-41S.