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Chronic cough: common causes in Sudanese young adults

Abstract

Background: Chronic cough has been reported to be the fifth most common complaint seen by primary care physicians. Diseases causing chronic cough include asthma, eosinophilic bronchitis, GERD (Gastro esophageal Reflux Disease), PNDS (Post Nasal Drip Syndrome) or rhinosinusitis, chronic obstructive pulmonary disease, pulmonary fibrosis, lung tumors, tuberculosis and bronchiectasis. In some patients, no cause is identified, leading to the diagnosis of idiopathic cough or UCC (Unexplained Chronic Cough). Chronic cough is associated with deterioration in patients' quality of life and the health-related dysfunction is most likely psychosocial.

Methods: This study was carried out to assess incidence of specialist chest physician visits attributable to chronic cough and to characterize patients and their underlying causes for chronic cough. One hundred and fifty subjects, who presented with chronic cough as their main complaint to our clinic setting in Khartoum North, were assessed clinically and investigated (Guided by the ACCP Approach). The specific causes were confirmed by appropriate investigations, as well as response to specific therapy. If rhinosinusitis was suspected, patients were then referred to otolaryngologist for an ENT workup.

Results: The frequency of chronic cough among patients was 13%, it was more frequent in females than in males, and there was increased chronic cough incidence with advancing age. Out of the 150 patients; 53 patients (35%) had chronic rhino-sinusitis; 43 patients (29%) had asthma and 30 patients (20%) had GERD. Other causes like tuberculosis and smoking constituted the remaining 16% of the patients.

Conclusion: Chronic cough remains a common benign disorder with rhinosinusitis as its principal cause, followed by asthma and gastro esophageal reflux disease. The cause of chronic cough could be frequently outside the lower respiratory tract. Cough duration and the age of patient are important in the diagnostic workup.

Keywords: cough, GERD, causes, risk factors, Sudan

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Abbreviations: PNDS, post nasal drip syndrome; UCC, unexplained chronic cough; ACCP, American college of chest physicians; GERD, gastro esophageal reflux disease

Introduction

Cough is a protective reflex mechanism that clears secretions from the upper airways of the respiratory system; it is initiated by the stimulation of a complex neural reflex. Several different types of sensory nerve receptors respond to chemical or mechanical irritation. A cough center in the medulla receives signals from these activated cough receptors via afferent fibers in the vagus nerve. Voluntary inhibition or production of cough is possible because of the influence of higher cortical centers on this cough center. Motor signals are then sent to the muscles that produce the forced expiratory effort.[1]

Chronic cough is associated with deterioration in patients' quality of life and the health-related dysfunction is most likely psychosocial.[2] Chronic cough has been reported to be the fifth most common complaint seen by primary care physicians. Doctors should always work towards a clear diagnosis, considering common and rare illnesses.[3] In some patients, no cause is identified, leading to the diagnosis of idiopathic cough or the so called UCC (unexplained chronic cough). Initial evaluation of the patient with chronic cough should include a focused history and physical examination, and in most patients, chest radiography. Patients who are taking an angiotensin-converting enzyme inhibitor should switch to a medication from another drug class. The most common causes of chronic cough in adults are upper airway cough syndrome, asthma, and gastro esophageal reflux disease, alone or in combination. If upper airway cough syndrome is suspected, a trial of a decongestant and a first-generation antihistamine is warranted. The diagnosis of asthma should be confirmed based on clinical response to empiric therapy with inhaled bronchodilators or corticosteroids. Empiric treatment for gastro esophageal reflux disease should be initiated in lieu of testing for patients with chronic cough and reflux symptoms. Patients should avoid exposure to cough-evoking irritants, such as cigarette smoke. Further testing, such as high-resolution computed tomography, and referral to a pulmonologist may be indicated if the cause of chronic cough is not identified.

The definition of chronic cough is controversial; it has been characterized as a cough for 3weeks or more but recently, Irwin and Madison proposed that the period be increased to 8 weeks. Diseases causing chronic cough include asthma, eosinophilic bronchitis, gastro-esophageal reflux disease, postnasal drip syndrome or rhinosinusitis, chronic obstructive pulmonary disease, pulmonary fibrosis, lung tumors, tuberculosis and bronchiectasis.[4]

However, no studies have investigated the incidence of cough in public or private sector clinics in Sudan and the proportion of patients visiting specialist chest physician for chronic cough is still unknown but remains important in estimating the number of subjects with chronic cough to warrant advanced chest physician consultations and for assessing chronic cough burden on secondary health care system. This study was carried out to assess incidence of specialist chest physician visits attributable to chronic cough and to characterize patients and their underlying causes for chronic cough.

Materials and methods

We did 1115 consultations during the study period in our private pulmonology clinic setting in Khartoum North, Sudan. One hundred and fifty subjects (mean age 40+/-5years) who presented with chronic cough as the main complaint were assessed clinically and investigated according to the suspected diagnosis (Guided by the ACCP Approach), The ACCP guidelines offer a systematic approach that uses trials of empirical therapies to diagnose and resolve chronic cough.[5] The specific causes were confirmed by appropriate investigations, as well as response to specific therapy. If rhino-sinusitis was suspected, patients were then referred to otolaryngologist for an ENT examination with nasal endoscopy and / or sinus computed tomography.

Results and discussion

One hundred and fifty patients with chronic cough were assessed (mean 40+/-5years). The frequency of chronic cough among clinic patients was 13% and it was more frequent in females than in males (7.3% and 5.7% respectively), and there was increase in chronic cough incidence with advancing age. Out of the 150 patients; 53 patients (35%) had chronic rhino-sinusitis; 43 patients (29%) had asthma and 30patients (20%) had GERD. Chronic rhino-sinusitis was twice as frequent in males as in females (23% & 12% respectively).

Western and local data agrees with this study results and shows that in patients with a normal chest radiograph, the most common causes are postnasal drip syndrome, post infectious cough, gastro-esophageal reflux disease and cough variant asthma. Less common causes are the use of angiotensin-converting enzyme inhibitors, smoker's cough and nonasthmatic eosinophilic bronchitis.[3]

There is still limitation in the evidence supporting the diagnosis and management of UCC (Unexplained Chronic Cough) in young adults. UCC requires further searching to establish proper methods of investigation using established criteria for diagnostic intervention. Speech pathology-based cough suppression is suggested as a diagnostic trials and treatment option for unexplained chronic cough. The American College of Chest Physicians (ACCP) provided guidelines that suggest the diagnosis and treatment of UCC based on the best available evidence and identifies gaps in our knowledge as well as priorities for future studies.[6]

Conclusion

In our private pulmonary clinic setting chronic cough remains a common benign disorder with rhinosinusitis as its principal cause, followed by asthma and gastro esophageal reflux disease .The cause of chronic cough could be frequently outside the lower respiratory tract. The duration of cough and the age of patient are important in the diagnostic procedure of chronic cough.

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Conflict of interest

The author declares no conflict of interest.

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