

Neem (Azadirachta indica) as an Alternative Therapy for Tobacco Cessation

Addictive tobacco habit, both oral use and smoking, continues to be a major public health problem despite the availability of pharmacotherapeutic cessation aids. Long lasting abstinence rates following tobacco cessation measures remain less than optimal. Several alternative treatments have been studied for tobacco cessation including natural products, such as *Avena sativa*¹, lobeline², mint snuff³, black pepper extract⁴, St. John's wort⁵ and herbal tea preparation⁶. Although there is a lack of convincing evidence of efficacy, patients do use above alternative herbal drugs.

We recently came across an interesting case of a chronic tobacco chewer, who got rid of this habit by chewing tender *neem* leaves. As this observation has potential of developing a novel and effective remedy from herbal sources for achieving tobacco cessation we wish to share this experience with scientific community.

A-55-year-old male, an avid tobacco chewer for the last 10 years presented to us for his anginal pain. In view of his hypertension, previous coronary episode, stable angina and central obesity, he was advised standard anti-ischaemic treatment along with strict life style measures like zero tobacco chewing, morning walk and appropriate diet. He was also advised to come for review a month later. On second visit after a month, he was symptomatically much better, his angina had almost disappeared and his craving for tobacco chewing was no more. During the course of examination we noticed that the patient had a peculiar and unpleasant oral smell which was definitely not there during his previous admission. When enquired that how could he get rid of tobacco chewing, he disclosed that he experimented chewing tender *neem* leaves (*Azadirachta indica*) to quell the urge of tobacco chewing. He has been chewing about 5 grams of *neem* leaves per day for about one month regularly. This had completely abolished his tobacco urge. However, it did leave a bad odour and bitter taste in his mouth.

The *neem (Azadirachta indica)* tree, is an evergreen tree native to the Indian subcontinent. It has been popularly used for oral and cutaneous sepsis since centuries. Scientific studies have demonstrated *neem* to be having anti-proliferative, anti-oxidant, cytotoxic and anti-inflammatory properties.⁷ A number of bioactive components commonly referred to as limonoids have been isolated from various parts of the *neem* tree, which include azadirachtin, salannin, meliantriol, and nimbin. Azadirachtin constitutes the major component.

The bitter taste of the tender leaves lead this patient to chew the leaves intuitively to curb the urge of tobacco chewing and it turned out to be a successful attempt.

The very fact that tender *neem* leaves have plenty of chlorophyll and anti-infective and anti-mitotic properties make it a very attractive option to counteract the harmful effects of tobacco on oral mucosa. Further role of *neem* as an anti-diabetic and anti-oxidant makes it useful for other comorbidities so often associated with tobacco consumption. One of the question which need to be examined is whether *neem* leaves would be equally effective in smoking or not and their possible adverse effects, if taken for a long time.

Our finding provides a novel lead on the use of *neem* leaves for tobacco cessation for further research. *This case also highlights the fact that a physician should always listen to the patient as they at times themselves give clues to the diagnosis and treatment.* This aptly reminds us of William Osler's prudent aphorism 'Listen to your patient, he is telling you the diagnosis'. Should we not add 'patient sometimes hints at you the best therapy too' 'provided we are receptive enough to lend our ears to him'.

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Haemoptysis: The Definition Should Be Revised

We think that the definition of haemoptysis should be revised and it should be classified into two groups only, that is, active and massive or life threatening haemoptysis.

Classically, haemoptysis means expectoration and spitting of blood through the mouth, which can range from minimal to copious volumes. The real problem faced by the clinicians is to quantify and then to take action accordingly. If massive, haemoptysis can be fatal, and therefore, requires clear understanding and precise definition. The definition of massive haemoptysis varies widely in the literature and has not been completely agreed upon. The attempt of previous authors has been to define massive haemoptysis on the basis of volume of expectorated blood only and no cut-off volume has been agreed upon, which ranges between 100 mL/day¹ to as high as 1000 mL/day². Also, in real practice, the accurate quantification of haemoptysis is very difficult. In many instances the amount of expectorated blood may be exaggerated by patients. Not only that, patient may have accumulated huge amounts of blood in the healthy or opposite lung which will under-estimate the overall amount of blood loss and that may be significant.³ Lastly, mortality and morbidity in these patients depend on not only the volume of expectorated blood but also the rate of bleeding, the ability of the patient to clear blood from the airways and the extent and severity of any underlying lung disease.⁴

Authors feel the time has come to revise the definition which should be either active or massive / life-threatening haemoptysis. In active haemoptysis, bleeding is active but not threatening the haemodynamics of the patient. Bronchoscopy can localise the source of bleeding and any active treatment from local instillation of adrenaline to endobronchial placement of glue or bronchial artery embolisation may be planned.

The term, massive or life-threatening haemoptysis should be applied in patients where the bleeding is so intense as if the water tap has opened non-stop and the patient is sinking. This is the time when you fight to

access the airway at any cost to save the life, nothing works at that time. Even bronchoscopic guided intubation is theoretical. When massive bleeding is going on due to rupture of aneurysm or bronchial artery rupture or due to interventional bronchoscopic procedure like EBES and cryotherapy, this is the life-threatening condition. One has few minutes to access the airway. Patient is continuously coughing and expectorating blood and getting exhausted. In that period of few minutes if you are able to pass the endotracheal tube with the help of the team around, you will be able to salvage the patient. A good and continuous suction of the airway will help to avoid flooding of the bronchial tree and resultant hypoxia. This is what is true massive and life-threatening haemoptysis. So in our opinion and experience the definitions of haemoptysis should be either active or massive / life-threatening haemoptysis.

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