



THE IMPACT OF CONTINUING AND REINFORCEMENT ON TOBACCO CESSATION IN PATIENTS WITH THROMBOANGIITIS OBLITERANS (BUERGER'S DISEASE) WHO HAVE UNDERGONE AMPUTATION

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ABSTRACT

Thromboangiitis obliterans (TAO), commonly known as Buerger's disease, is a rare inflammatory vasculopathy primarily affecting small and medium-sized arteries and veins of the extremities.¹ Tobacco use is strongly associated with the onset and progression of TAO, often leading to severe complications such as critical limb ischemia and subsequent amputation.² Despite the well-established link between tobacco consumption and TAO, smoking cessation interventions tailored specifically for TAO patients, particularly those who have undergone amputation, remain limited. This research paper aims to investigate the effect of continuing and reinforcement on tobacco cessation in TAO patients who have experienced at least one amputation.

KEYWORDS

TAO- thromboangiitis obliterans, buerger's disease, amputation, intermittent claudication, tobacco glycoprotein.

INTRODUCTION:

Thromboangiitis obliterans (TAO), or Buerger's disease, is characterized by the development of inflammatory thrombi affecting the small and medium-sized arteries and veins of the extremities. The disease primarily affects young to middle-aged individuals, with a strong association with tobacco use.¹ The disorder has been identified as an autoimmune response triggered when nicotine is present. The prevalence of TAO varies geographically but is notably higher in populations with high rates of tobacco consumption.²

Clinical features include being asymptomatic, intermittent claudication, rest pain, ischaemic ulcer and gangrene.³

Etiological Factors-

- Smoking-** Tobacco use or exposure is a major factor in the development and course of the illness. Patients with TAO had higher cellular sensitivity to types I and III collagen than do patients with arteriosclerosis obliterans or healthy males. This was demonstrated by means of an antigen-sensitive thymidine-incorporation assay. There exists a possibility that an inflammatory small vessel occlusive illness is caused by an aberrant sensitivity or allergy to certain tobacco components. Modifications in vascular reactivity that may arise in users of cigarettes may have a connection to purified tobacco glycoprotein (TGP).⁴
- Genetics
- Hypercoagulability
- Endothelial dysfunction
- Infection

Amputation is a common consequence of TAO, often resulting from the progression of critical limb ischemia, which is exacerbated by continued tobacco use. Despite the dire consequences of smoking in TAO patients, effective cessation strategies tailored to this population, particularly those who have undergone amputation, are lacking.⁵

Diagnostic Criteria- The traditional diagnosis of Buerger's disease is based on the 5 criteria of Shionoya, which are smoking history, onset before the age of 50 years, infrapopliteal arterial occlusive disease, either upper limb involvement or phlebitis migrans, and absence of atherosclerotic risk factors other than smoking.⁶

Aims And Objectives:

- This study aims to evaluate the impact of rigorous counselling, patient education, and regular reinforcement, group classes on tobacco cessation in TAO patients who have undergone at least one amputation.
- Specifically, the study seeks to assess the effectiveness of ongoing support and reinforcement interventions in promoting long-term

smoking cessation among this patient population.

Methods:

Study Design: A prospective, longitudinal study will be conducted to assess the effect of continuing and reinforcement on tobacco cessation in TAO patients with a history of amputation.

Study Population: All the patients with TAO disease in OPD of department of general surgery and vascular clinics, Motilal Nehru Medical College, Prayagraj who have undergone at least one amputation and history of smoking or smokeless tobacco was recruited as the study population.

Study Period And Duration- March 2021 to April 2024

Exclusion Criteria- Participants with

- Diabetes mellitus
- Hypertension
- History of trauma.
- Deep vein thrombosis
- Any coagulation disorders

Intervention: Participants received personalized smoking cessation counselling and support, including behavioural interventions, pharmacotherapy, and regular follow-up sessions. The intervention will focus on providing ongoing support and reinforcement to encourage long-term tobacco abstinence.

60 patients, 55 males and 5 females were studied, that had already undergone one amputation of different regions. 17 had amputation of right great toe and 2nd phalanx, 15 had amputation of right 4th and 5th phalanx, 13 had amputation of left great toe, 9 had amputation at right metatarsophalangeal joint and 3 had amputation of right ankle and 3 had amputation at left metatarso- phalangeal joint.

These 60 patients were followed for a period of 3 years. They were counselled to quit smoking. These patients were called on a monthly basis, first Monday or Wednesday of every month. In every meeting they were told about the negative impact of smoking and tobacco on the disease and their body. 20 patients didn't comply and continued smoking. 40 patients quit smoking out of which 25 patients resumed smoking after few follow ups and 15 patients out of 40 did not smoke at all.

Table 1: Smoking And Amputation

	Amputation	No Amputation
Smoking	32	13
Not smoking	05	10

RESULTS:

Smoking plays an important role in the development and progression of TAO. Proper counselling of these patients to stop smoking was an important task to determine the outcome of this study. After proper counselling and follow up 15 patients stopped smoking completely, which is 25% of the patients, whereas 25 patients stopped temporarily and 20 patients did not stop at all. When 60 patients were followed up for 3 years, 45 started smoking, out of which 32 pts underwent amputations again and 13 did not require further amputation.

15 patients who did not smoke, 5 underwent amputation and 10 did not require further amputation.

There is positive association of smoking cessation with progression of Buerger's disease. There is twice the risk of further amputation of the previously amputated patients who continue to smoke.

Though, cessation of smoking reduces further risk of amputation but smoking itself in the beginning causes much damage to the limb. Therefore, even after cessation of smoking there was around 33% risk of further amputation in our study.

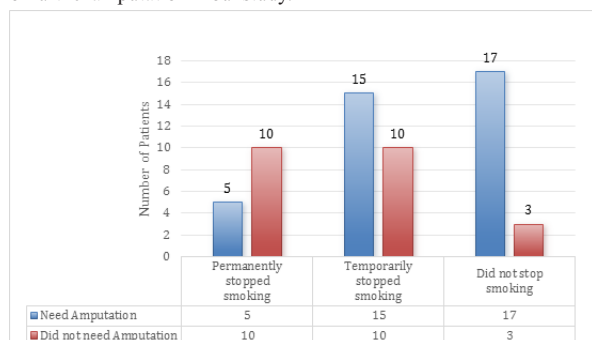


Table 2- Effect of smoking on amputations

CONCLUSION:

To conclude, tobacco cessation is paramount in the management of TAO, particularly in patients who have experienced amputation. The study shows the importance of the impact of proper counselling on cessation of smoking. By providing personalized support and reinforcement, it is hoped that this intervention will contribute to improved clinical outcomes and quality of life in TAO patients.

DISCUSSION-

There is positive relation of cessation of smoking with the improvement in TAO patients. In our study one on one counselling was done, and each patient was followed up regularly. Unlike previous study, our study compared the progression of the disease due to cessation of smoking in previously amputated patients.

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