To Evaluate Prevalence and Management Options of Buerger's Disease at Tertiary Hospital.

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ABSTRACT

Introduction: Burgers' disease is a uncommon disease involving the young or middle age persons with history of smoking. Recently, it is detected that incidence has enormously increased among women. It is also observed that this condition is common in smokers as compared to non smokers but its pathophysiology is still unknown. **Purpose of study:** To detect the prevalence and find out the better treatment option in Buerger's disease. **Material and methods:** This study was conducted in Department of Orthopedics at PMCH Nawabshah from 01st June 2018 To 31st octomber 2019. Complete history and examination was done. History of smoking was taken specifically. Apart from routine biochemical investigations, Dopller ultrasound of the affected parts was done to find out the integration of the vessels. The treatment was decided accordingly. **Results:** This is study of 50 patients. There were 15 (30%) and 35 (70%) females. Of all, 45 (90%) patients were smokers and only 5 (10%) were non smokers. Age ranged from 35 to 50 years. 35 (70%) patients underwent for amputation of toes of foot. And only 15 (30%) patients were given medical therapy. Anticoagulants, vasodilators and analgesics were also given. **Conclusion:** It is concluded that prevalence has increased in women and amputation has better results in advanced stages.

Key words: Buerger's disease, Doppler, Smokers, Amputation, Vasodilators.

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INTRODUCTION

Burgers' disease also called Thromboangitis Obliterans is a rare disease commonly affecting the young or middle aged males who are smokers. The commencement of symptoms occurs usually before the 4th decade of life. Currently, incidence is found increased in women also. Some analysts say that this is due to increase in number of smoker women. Previously, the ratio of male female was 100:1 but now it has been reported with ratio of 10:1. This disease is rarely found in non smokers.[1] Burger's disease is very rare in USA and Europe but is commonly reported in regions of Asia and the Far and Middle East. Only 12-20/100000 people are found to be suffered from this disease in USA. It is also seen in patients using smokeless tobacco.[2]The pathophysiology of this disease entails that this disease is caused by narrowing or blockage of veins and arteries of extremities resulting in reduction or stoppage of blood flow to the relevant areas. The exact cause is not still detected but tobacco association is strongly favored by all researchers. Either tobacco is in currently used, or having history of smoking in past, it is the common cause of this disease[3]. Some scientists are of the opinion that this disease is autoimmune. In some cases, trauma to hand or foot is the causative factor for the condition. Genetic factors may play role as its incidence is commonly seen in some ethnic groups[4]. Legs are commonly affected as compared to arms. The first symptom that patient develops is the

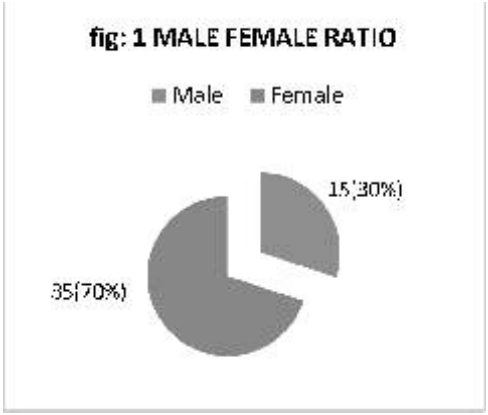
pain in lower arms and legs at rest. Patients experience cramping in the legs while walking but in rare cases limping is also noted. Sores/ ulcers in extremities, numbness and tingling is also found. Due to decrease in blood flow to fingers or toes, Raynaud's phenomenon and thrombophlebitis results. In severe cases, gangrene of affected limbs occurs. Dry dark ulcerations are formed on the tips of fingers or toes which is extremely painful. Neurological abnormalities are also seen in some cases.[5] Its diagnosis is done by identification of clinical history and examination. Victims are usually the diagnosed People who smoke. Angiography and other non invasive techniques confirm the diagnosis[6]. Its treatment is symptomatic and supportive. Stopping smoking improves the symptoms even the cessation of tobacco can culminate this disorder. Reluctant to cessation of smoking causes the surgery failure. Medical management include anti coagulants, vasodilators, anti inflammatory and analgesics. In some cases, surgery may be necessary. Sympathectomy is done in some cases but in severe cases, amputation of affected part is done.[7] The rationale of our study is to detect the prevalence and evaluate the outcome of management options of burger's disease so that the better management may be applied for the benefit of patients.

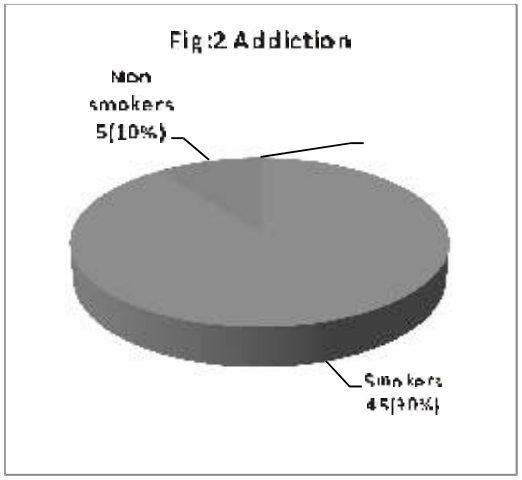
Methodology: This study was done in Department of Orthopedics at PMCH Nawabshah. This is a cross sectional study done from 01st June 2018 To 31st Octomber 2019. All the patients were taken from OPD and Emergency center. Detailed history and clinical examination was done. History of smoking was taken specifically. Routine investigations were advised. Dopller ultrasound of the affected parts was done to find out the integrity of the vessels. The treatment was decided according to the said criteria that was decided according to the stage of the disease.

Results: This study included total 50 patients. A marked difference was found in gender ratio. Previously studies showed the increase in number of male patients but now in our study, females are the common sufferers as is shown in fig 1 below. There were 15 (30%) and 35 (70%) females. This disease is commonly found in smokers. Of all, 45 (90%) patients were smokers and only 5 (10%) were non smokers as is shown below in fig 2. Age ranged from 35 to 60 years. Area affected also varied according to the disease. 47(94%) patients were found to be affected by lower limb especially foot. Only 3 (6%) patients were suffering from the upper limb diseases fig 3. The treatments of patients were decided according to the condition of the wound. 35 (70%) patients underwent for amputation of toes of foot. And only 15 (30%) patients were given medical therapy. Anticoagulants, vasodilators and analgesics were given.fig 4 The complications of surgery were least. Pain was most common symptoms present in 30(60%) patients. Hematoma was found in 7(14%) patients only. Wound infection was in 3(6%) cases only. Phentomb limb was noted in 15(30%) only. Bone cut through was not found in any patient as is shown in table 1 below.

Table 1 COMPLICATIONS

S.NO:	COMPLICATIONS	NO OF PATIENTS	%
1	Postoperative pain	30	60%
2	Hematoma	7	14%
3	Phantomb limb	15	30%
4	Wound infection	3	6%
5	Bone cut through	0	0





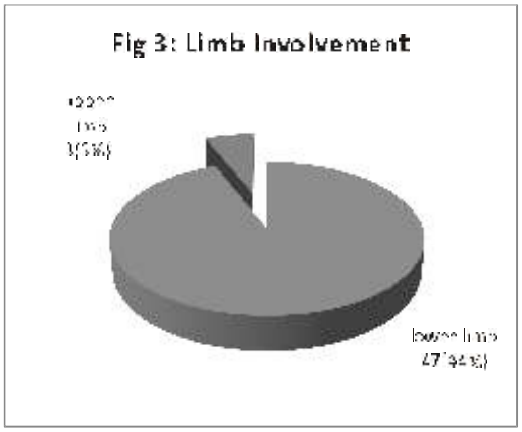
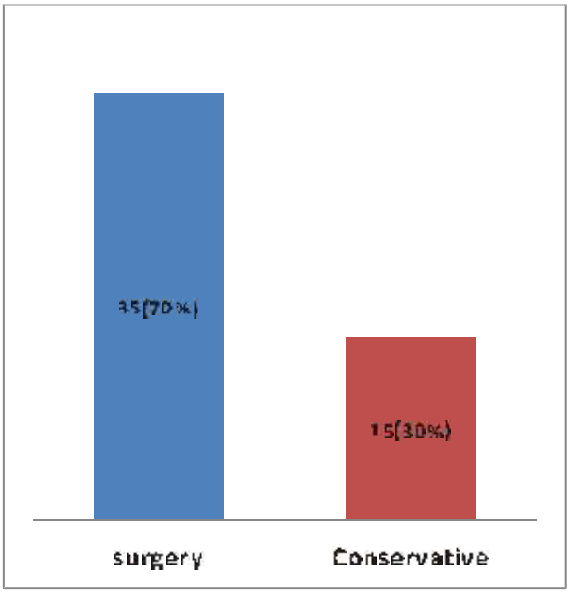


Fig 4: SHOWING MANAGEMENT OPTIONS USED



DISCUSSION: Buerger's disease is a non atherosclerotic inflammatory arteritis. It affects small to medium sized arteries and also the veins of extremities. Though this disease is caused by smoking but its co relation with smoking is still obscure. It mostly affects younger but can occur at any age. The areas of body with end arteries commonly result to ischemia and ultimately amputation of that part of the body. These are the arteries of both limbs particularly lower limb.[8] The study conducted showed the prevalence of this disease up to 34%. Previously this modality was common among males but in 20th century, drastic change has occurred in incidence on gender basis in 20th century. It was commonly noted in women. Some researchers are of the opinion that this change has ensued due to excessive use of tobacco by women[9]. In North America, a study done at end of 20th century detected dramatic change in gender incidence. There was increase in prevalence of the condition in women. In our study, women ratio is also increased up to 70% in females and only 30% in males[9,10]. A vascular event is defined as the acute condition of the disease that requires treatment modifications like claudication worsening, limb ischemia, ulcers, necrosis, superficial vein thrombosis and limb infection related to ischemia or death.[11] Amputation is recommended in such conditions. Amputation was defined as major if it affected the tibiotarsal articulation lower limbs and for upper limbs, it involved metacarpo-phaangeal articulation. Cooper et al study done at Mayo Clinic showed that 48% patients underwent amputation. This study also concluded that the patients who stopped smoking had lower rate of amputation. In Western Europe, Borner et al studied this condition and resulted that the disease resulted in termination of working life. This was very innovative result drawn by this researcher.[12] In our study, the amputation was done in 70% patients. In a study, amputation remained minor in 66% patients. Amputation free survival rate of 5,10,15 years was in 85%,74% and 66% respectively.[13] Smoking is also the major contributor in the causative agents of this disease. Smokers who have stopped smoking at 1 year are considered to ex smokers. In our study, the smokers affected were 90% whereas only 10% were non smokers.[14]

Conclusion: It is concluded that prevalence has increased in women and amputation has better results in advanced stages.

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