

# Progress and incidence of Buerger's Disease in Bangalore

S Sekhar, D Thomas, N Meera, R Koneri, P Balakrishna

## Citation

S Sekhar, D Thomas, N Meera, R Koneri, P Balakrishna. *Progress and incidence of Buerger's Disease in Bangalore*. The Internet Journal of Epidemiology. 2007 Volume 6 Number 1.

## Abstract

Back ground: Buerger's disease, the etiology of which is still largely unknown, is a rare peripheral vascular disease, which occurs predominantly in young men who smoke. There is an extremely high prevalence of the disease in India among people of low socioeconomic class who smoke homemade cigarettes with raw tobacco.

Aim: The purpose of this study was to know changes in the incidence and progress of the disease.

Methods: A retrospective study was carried out for a period of five years (January 2001 to December 2005) to investigate the changes in the incidence and progress of Buerger's disease. Buerger's disease was diagnosed according to Olin's diagnostic criteria.

Results: Total number of PVD patients admitted during past 5 years was 493; of these 233 were TAO cases, out of which 197 were admitted for initial treatment, and 38 patients had a history of treatment and were admitted for worsening of Buerger's disease.

Conclusion: The incidence of Buerger's disease and its progress seems to be decreasing in Victoria Hospital, Bangalore.

## INTRODUCTION

Buerger's disease or Thromboangiitis obliterans (TAO) is a nonatherosclerotic segmental inflammatory disease that most commonly affects the small and medium-sized arteries, veins, and nerves of the arms and legs.<sup>1,2</sup> The incidence of arterial disease has assumed alarming proportions all over the world. Although Buerger's disease has a worldwide distribution, it is more prevalent in the Middle East and Far East than in North America and Western Europe, in part because of differences in diagnostic criteria.<sup>3,4</sup> At the Mayo Clinic, US the proportion of patients with the diagnosis of Buerger's disease has steadily declined, from 104 per 100,000 patients in 1947 to 12.6 per 100,000 in 1986. The prevalence of the disease among all patients with peripheral arterial disease varies from as low as 0.5 to 5.6 percent in Western Europe to as high as 45 to 63 percent in India, 16 to 66 percent in Korea and Japan, and 80 percent in Israel among Jews of Ashkenazi ancestry.<sup>5,6</sup> Thromboangiitis obliterans is more common in countries with heavy use of tobacco. There is an extremely high prevalence of thromboangiitis obliterans in India among people of low socioeconomic class who smoke bidis (homemade cigarettes

with raw tobacco).<sup>7</sup> Hence the purpose of this study was to know changes in the incidence and progress of the disease in Bangalore.

## METHODS

A retrospective study of collecting data by data base of patients with Buerger's disease admitted to surgery inpatient department of Victoria Hospital, Bangalore between January 2001 and December 2005 was conducted to investigate the changes in the prevalence and progress of Buerger's disease. This is 968 bedded tertiary care teaching hospitals providing specialized healthcare services to all strata of people in and around Bangalore. The hospital comprise of 5 surgery units. Data with respect to number of TAO patients and PVD patients admitted during past five years were recorded. Details of number of patients who have a history of previous treatment and number of patients newly diagnosed were also collected for analysing the data. Besides this patient's demographic details like age, sex and familial history also collected.

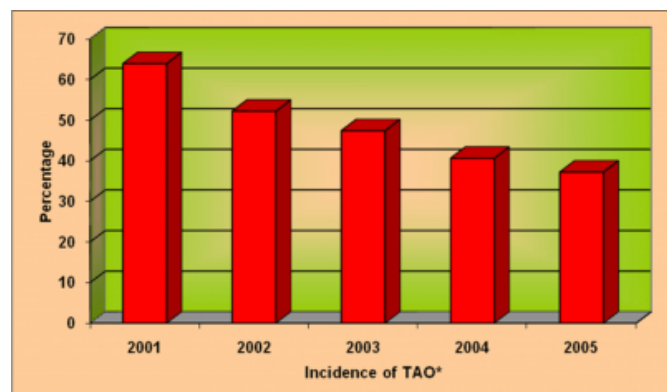
## RESULTS

In this series we didn't come across any females with TAO.

So in our series, sex incidence is 100% male. Out of all the admitted TAO patients, 71.8% were aged > 40, whereas the remaining 28.2% were ≤ 40 years only.

**Figure 1**

Figure 1 : Incidence of TAO in the past 5 years



\*TAO: Thromboangiitis Obliterans

During 2001, 83 patients were admitted for PVD, of these 53(63.9%) were TAO patients; whereas in 2002, 2003, 2004 and 2005, the respective numbers were 94 and 49(52.2%); 97 and 46(47.4%); 106 and 43(40.6%); and 113 and 42(37.2%).

**Figure 2**

Table 1: Progress of TAO disease

S.N	Year of admission	No. of TAO patient	Newly diagnosed TAO	TAO with history of Treatment
1	2001	53	42 (79.2%)	11 (20.8%)
2	2002	49	40 (81.6%)	9 (18.4%)
3	2003	46	39 (84.8%)	7 (15.2%)
4	2004	43	37 (86.1%)	6 (13.9%)
5	2005	42	37 (88.1%)	5(11.9%)

\*TAO: Thromboangiitis Obliterans

During 2001, 42(79.2%) patients were admitted with newly diagnosed Buerger's disease and 11(20.8%) were admitted because of Buerger's disease exacerbation; whereas in 2002, 2003, 2004 and 2005, the respective numbers were 40(81.6%) and 9(18.4%); 39(84.8%) and 7(15.2%); 37(86.1%) and 6(13.9%); and 37(88.1%) and 5(11.9%).

## DISCUSSION

As the patients of Buerger's disease are young, the earning

age is disturbed. This causes socio-economic morbidity for the family and society too. So, early diagnosis, prevention and management of Buerger's disease have prime importance. <sup>8,9</sup> Usually males suffer Buerger's disease. <sup>10</sup> In our study we did not come across any female patient. Mean age of Buerger's disease patients at the time of onset in Japanese study was 36.8 years. But 71.8% of cases in our study belonged to the age >40 years.

Study conducted by Laohapensang K et al. reported there is a decrease in the incidence of Buerger's disease in North Thailand. In their study between 1988 and 1995, 23 patients were admitted with newly diagnosed Buerger's disease, 52 were admitted because of Buerger's disease exacerbation, and 372 were admitted for a peripheral arterial occlusive disease (PAOD); whereas between 1996 and 2002, the respective numbers were, 18, 15, and 632. <sup>11</sup>

Another study conducted in Japan by Matsushita M et al. observed that forty six new patients were admitted between 1985 and 1989, but only 12 new patients were admitted between 1990 and 1996. Between 1985 and 1989, 44 patients were admitted because of disease exacerbation, whereas only 24 such admissions occurred between 1990 and 1996. <sup>12</sup> Similarly in our study during 2001, 83 patients were admitted for PVD, of these 53% were TAO patients; whereas in 2002, 2003, 2004 and 2005, the respective numbers were 94 and 49; 97 and 46; 106 and 43; and 113 and 42. During 2001, 42 patients were admitted with newly diagnosed Buerger's disease and 11 were admitted because of Buerger's exacerbation; whereas in 2002, 2003, 2004 and 2005, the respective numbers were 40 and 9; 39 and 7; 37 and 6; and 37 and 5. The incidence of progress of Buerger's disease seems to be decreasing in our institution. A similar decrease in prevalence appears to have occurred in Japan and Thailand.

## CONCLUSION

Although the incidence of Buerger's disease in young women is increasing worldwide, in India it still remains low. It is noted that there have been certain definitive changes in relation to number of patients during study period. Firstly, the number of patients who visited at outpatient clinic as well as to admit hospital has been sharply declined. Secondly, the number of surgical treatments of Buerger's disease has also decreased. The incidence of this disease and its progress both seem to be decreasing in Victoria Hospital Bangalore. A similar decrease in incidence appears to have occurred in Western countries and East Asian countries like

Japan and Northern Thailand. It is difficult to predict accurately what kind of factors are affecting or contributing to the changes in Buerger's disease. It is suggested that the changes in pattern of smoking may playing a major role in modification of disease process.

### **CORRESPONDENCE TO**

Mr.Sonal Sekhar M Faculty of pharmacy practice, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham University, AIMS Healthcare Campus, Elamakkara (P.O), Kochi, Kerala, India: 682026, E-mail: ask4sonal@yahoo.co.in Fax: +91484-2802141, Phone: +91484-2802140, 2802141, +91484-2801234-8275.

### **References**

1. Olin JW. Thromboangiitis obliterans(Buerger's disease). *N Engl J Med* 2000; 343:864-9.
2. Diehm C, Stammlar F. Thromboangiitis obliterans(Buerger's disease). *N Eng J Med* 2001;344:230-1.
3. Sauvanier M, Constans J, Skopinski S, Baycat D, Berard A, Parrot F, et al. Lower limb occlusive arteriopathy: retrospective analysis of 73 patients with onset before the age of 50 years. *J Mal Vasc* 2002 Apr; 27(2):69-76.
4. Mills JL. Buerger's disease in the 21st Century: diagnosis,clinical features, and therapy. *Semin Vasc Sug* 2003; 16(3):179-89.
5. Watts RA, Scott DG. Epidemiology of the Vasculitides. *Curr Opin Rheumatol* 2003; 15(1):11-6.
6. Kirchner JT. Update on Thromboangiitis obliterans-Buerger's disease.American Family Physician 2001 Mar.
7. Rahman M, Chowdhury AS, Fukui T, Hira K, Shimbo T. Association of Thromboangiitis obliterans with cigarette and bidi smoking in Bangladesh: a case-control study. *Int J Epidemiol.*2000;29:266-270.
8. Mills JL. Buerger's disease in the 21st Century: diagnosis,clinical features, and therapy. *Semin Vasc Sug* 2003; 16(3):179-89.
9. Ohta T, Ishioashi H, Hosaka M, Sugimoto I. Clinical and social consequences of Buerger's disease. *J Vasc Surg* 2004 Jan;39(1):176-80.
10. Lau H , Cheng SW. Buerger's disease in Hong Kong: a review of 89 cases. *Aust N Z J Surg.* 1997 May;67(5):264-9.
11. Laohapensang K, Rerkasem K, Kattipattanapong V.Decrease in the incidence of Buerger's disease recurrence in northern Thailand.*Sug Today* 2005;35(12):1060-5.
12. Matsushita M, Nishikimi N, Sakurai T,Nimura Y. Decrease in prevalence of Buerger's disease in Japan. *Surgery* 1998 Sep; 124(3):498-502.

**Author Information**

**Sonal Sekhar, M.Pharm**

Senior Lecture, Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham University, AIMS Healthcare Campus

**Dennis Thomas, M.Pharm**

Junior Manager, Corporate Medical Services, Dr.Reddy's Laboratories Ltd

**N.K. Meera**

Asst.Professor, Visveswarapura Institute of Pharmaceutical Sciences

**Raju B. Koneri, Ph.D.**

Professor, Dept.of Pharmacology, Visveswarapura Institute of Pharmaceutical Sciences

**Pratap Balakrishna, M.S.**

Professor, Department of Surgery, KIMS Hospital & Research Center,