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Author(s)	Ip, MSM; Lam, B; Chan, KN; Chung, KF; Tsang, KWT; Lam, SP; Ho, CM; Karlberg, JPE; Lam, WK
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PRELIMINARY RESULTS OF PREVALENCE STUDY OF OBSTRUCTIVE SLEEP APNOEA IN MIDDLE-AGED CHINESE IN HONG KONG

Mary Ip, B Lam, KN Chan*, KF Chung**, KWT Tsang, SP Lam, CM Ho, J Karlberg, WK Lam. Department of Medicine, Paediatrics*, Psychiatry**, The University of Hong Kong, Queen Mary Hospital, Hong Kong SAR, China.

Obstructive sleep apnoea syndrome is reported to afflict 2-4% of middle-aged Caucasian subjects, but there is no data for oriental populations. We are conducting a prevalence study in the middle-aged (30-60 years) Chinese working population in Hong Kong using questionnaires followed by sleep studies. We report on the interim analysis for this project, based on results obtained from subjects recruited from the first institution being surveyed. Questionnaires were distributed to 1410 office staff, with a response rate of 58%. Of these, 81 underwent full sleep studies. The following are the results of the sleep studies: Respiratory disturbance index (RDI) <5=50, RDI≥5 =31, RDI≥10=24, RDI≥20=18. Those with RDI ≥5 and Epworth Sleepiness Scale (ESS) ≥9 or an RDI≥10 regardless of ESS score were recalled for evaluation by a physician. 29 of the 31 were recalled, and 28 were reassessed. Of these, 16 (15 men) were considered to suffer from obstructive sleep apnoea syndrome (OSAS) which required active intervention with nCPAP or oral appliance, while the others were given advice for conservative management. Although their BMI is significantly different from those who did not have sleep apnoea, their BMI is much lower and they have fewer associated medical diseases than those patients who are being actively referred to our sleep clinic for evaluation, suggesting a need for a higher index of suspicion for sleep apnoea in the "general" population. For the first time, prevalence data is forthcoming from a non-Caucasian population. Our preliminary finding suggests that at least 2% of middle-aged Chinese male office workers in Hong Kong suffer from symptomatic but previously unrecognised obstructive sleep apnoea syndrome. This prevalence rate is comparable to that at 1-4% in Caucasian studies. However, our middle-aged females have a much lower prevalence at 0.2% compared to that of 2% in a US study, which may be partly related to a more stringent threshold of diagnosis used in our study, and partly to the younger mean age and lower BMI (even when compared to the general Hong Kong sex and age matched population) of our recruited female subjects. Further work is on-going to study more subjects firmly to establish the prevalence of sleep apnoea in middle-aged Chinese in Hong Kong and to evaluate the anthropometric characteristics in comparison with Caucasians.

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SERUM FACTORS IN BRONCHIECTASIS CAN ENHANCE NEUTROPHIL CELL ADHESION MOLECULE EXPRESSION OF ENDOTHELIAL CELLS

Mary Ip, Maria Wong*, Yan Xiong, Ho CM, Kenneth Tsang, Lam WK. Departments of Medicine and *Pathology, University of Hong Kong, Hong Kong SAR, China.

There is evidence for persistent airways inflammation in severe diffuse bronchiectasis. We hypothesise that there are circulating factors in patients that would enhance the expression of cell adhesion molecules (CAM) promoting adhesion of neutrophils to vascular endothelium, as part of the vicious cycle of inflammation. Serum was obtained by venesection and centrifugation from healthy subjects and patients with diffuse idiopathic bronchiectasis in the steady state. Human umbilical venous endothelial cells HUVEC (Cascade Biologics, OR, USA) were cultured, plated into wells and grown to confluence in monolayers. Cells were then incubated with control serum (n=10) or patient serum (n=29) for 4 hours and 16 hours and measured for E-selectin and ICAM-1 expression respectively using cell ELISA techniques with the respective monoclonal antibodies (R&D systems, USA). Results indicate that patient serum, compared to control serum, significantly increased the expression of both e-selectin (0.071 ± 0.05 vs 0.0373 ± 0.019 , $p=0.022$) and ICAM-1 (0.3366 ± 0.156 vs 0.2041 ± 0.111 , $p=0.014$) (expressed as optical density units, mean \pm SD). There is no positive correlation between the stimulation of expression of the two cell adhesion molecules for paired serum (n=22). For the first time, it is demonstrated that patient serum in bronchiectasis would enhance neutrophil CAM expression with the potential of increasing neutrophil adhesion to vascular endothelium and recruitment into the airways. Further work is necessary to characterise the mediators responsible for this action.

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