

RESEARCH PAPER:

Occupational asthma in labourers employed at cement industries in Tadipatri Mandal of Anantapur district Andhra Pradesh, India

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SUMMARY

Investigation has been made on the occupational asthma in labourers of cement industries in Tadipatri Mandal of Anantapur district, Andhra Pradesh, India. Clinical data were obtained by conducting survey among 9258 long term exposed (8 to 11 years) labourers. The major respiratory symptoms prevalent were wheezing (17.75%), asthma (16.30%), dyspnoea (14.07%), and cough (productive and non productive cough) (12.63%). Asthma and dyspnoea were identified as major symptoms in labourers working at cranes and packing. Labourers working in kiln, raw mill and maintenance were reported with fewer symptoms than the labourers in cranes and packing. The prevalence of developing asthma (69%) was more in labourers at cranes and packing than labourers working in above said work satisfactions. Current smokers of cement industry were at higher risk of developing chronic bronchitis and wheeze. Chronic cough was common symptom in all the labourers and especially in laborers working at cranes and packing were at higher risk for developing productive cough and frequent attack of dyspnoea were more and incidence of respiratory symptoms was also higher in them after adjusting for age and smoking habit. Comparative study of blood samples between the exposed and control revealed significant variation with reference to differential leukocyte count, in particular eosinophils count, in loaders and packers, a sharp rise of eosinophils was noticed. Eosinophils in hyper responsive subjects (asthmatics) significantly increased the risk to develop on or more respiratory symptoms.

Key words :

Occupational
asthma,
Wheezing,
Dysopnoea,
Eosinophilis,
Respiratory
symptoms

Production process in the factory involves three main work stations cranes, crusher and packing, kiln and raw mill, and maintenance of machinery. Exposure to cement dust is likely to vary in the different stages of production process. Therefore in order to understand the variation in dust exposure and the risk of developing of respiratory disorders in work place, three main work stations were selected from which the magnitude of variability in dust exposure was assessed within labourers and between labourers.

Several prevalence studies have suggested an association between occupational exposure and respiratory symptoms and asthma, but there has been a lack of incidence studies to verify this. This study examined the incidence of respiratory symptoms, asthma and to explore the respiratory morbidity in terms of symptoms in chronic exposed labourers working in cement industry for more than 11 years.

MATERIALS AND METHODS

All out patients N=9258 (attending

Government Medical College Hospital in Anantapur district, Andhra Pradesh) were considered for the study during the period May 2003 to April 2008. The total strength of the labourers were categorized in to three groups according to the working areas (Table 2) which include cranes and packing, kiln and raw mill, and maintenance and administration. Labourers having respiratory problems like chest pain, dyspnoea, problems with nose and throat, cold, breathing problem, asthma, productive and non productive cough, and wheezing were included for the study. Subjects were considered symptomatic if they reported one or more of the following chronic respiratory symptoms cough or phlegm production on most days or nights as long as 3 consecutive months referred to as chronic cough/ chronic phlegm. A period of at least 3 week during the previous 2 years with increased cough and phlegm were considered as bronchitis, shortness of breathing when walking referred as dyspnoea, whistling sound in chest on most days or nights as persistent wheeze or attacks of shortness of

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