ABSTRACT

Asthma is a chronic health problem affecting persons of all ages and has become a major health issue in India. The present study has been conducted to assess anthropometric profile and pulmonary functions of bronchial asthma patients and is based on cross sectional data collected on 403 (216 males, 187 females) bronchial asthma patients and 347 (158 males, 189 females) normal healthy subjects, ranging in age from 20-70+ years from Hoshiarpur district of Punjab.

Anthropometric profile of asthma patients was studied by recording 13 anthropometric measurements i.e. weight, linear measurements (stature, sitting height, subischial length), chest width, circumferences (upperarm, chest in males only, waist and hip) and skinfolds (biceps, triceps, subscapular, suprailiac). Body mass index and waist to hip ratio have been derived from these measurements. Body composition i.e. body fat and lean body mass have been calculated by applying equations given by Durnin and Womersley (1974).

Pulmonary functions have been assessed using portable electronic Helios-401 spirometer (Recorders and Medicare Systems, Chandigarh). Eight pulmonary function parameters viz. forced vital capacity, forced expiratory volume in one second, ratio of forced expiratory volume in one second to forced vital capacity, forced expiratory flow 25-75%, peak expiratory flow rate, forced expiratory volume in three seconds, ratio of forced expiratory volume in three seconds to forced vital capacity and lung age have been recorded on each subject.
Asthma patients have been found to be significantly lighter in weight, with lesser values of circumferences and skinfolds. The body fat and lean body mass have also been found to be lesser in patients. All the pulmonary function variables have significantly lower values in patients. In patients, pulmonary functions have been found to improve with increase in BMI even in the category of obese. Increase in waist circumference has also shown positive effect on pulmonary functions in patients. Male patients have also been benefitted from higher waist to hip ratio as shown by improved pulmonary functions. It has also been observed that smoking aggravates the decline in pulmonary functions in asthma patients. With increase in duration and severity of the disease the pulmonary functions have shown decline although in males with increase in duration of more than 10 years some improvement in pulmonary functions has been observed.

Anthropometric assessment of asthma patients is of vital importance to assess the impact of this chronic disease on body morphology. As pulmonary function reflects the overall health status of the patients and is an important indicator of mortality, so it is imperative to understand the link between anthropometric profile and pulmonary functions of asthma patients to manage the disease effectively and maintain the pulmonary function status of the patients as close to normal as possible.