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An economic analysis of the costs associated with weight status in chronic obstructive pulmonary disease (COPD)

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Malnutrition in patients with COPD is a common problem which has been associated with increased healthcare utilisation[1]. In contrast, epidemiological studies have reported that obesity in COPD is associated with better survival than both underweight and normal weight COPD patients[2], contributing to the concept of the 'obesity paradox', The aim of this study is to examine the extent to which weight status, over a wide range of body mass index (BMI), influences healthcare costs in COPD.

424 outpatients with COPD were followed up for 1 year post screening during 2008–2009. BMI and healthcare use (emergency and elective hospital admissions, length of stay, outpatient appointments) were recorded. Healthcare costs were established according to Department of Health NHS reference costs 2007[3] and modelled according to BMI classification at the point of screening.

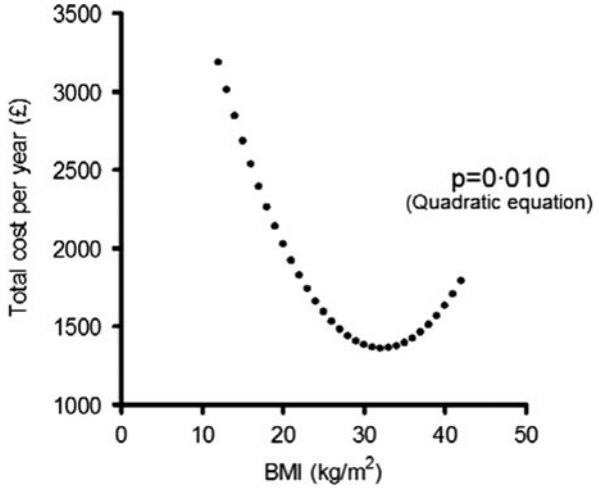

Fig. 1. Total secondary healthcare use costs per patient per year according to BMI, adjusted for age, gender and COPD disease-severity (GOLD 2009), using univariate analysis.

The figure shows that the lowest healthcare costs are associated with a BMI in the obesity range (BMI ~32 kg/m^2), an increase in the BMI range of 20–25 kg/m^{2}and as much as a 2 to 3-fold increase in the BMI range of <20 kg/m^2. The increased costs associated with a BMI <25 kg/m^2 were mainly attributed to increased frequency of emergency admissions. The costs increased in the severely obese (BMI>40 kg/m^2) but were not as high as those who were underweight (BMI<20 kg/m^2).

This study suggests that after adjusting for certain confounding variables including COPD severity (Fig. 1) the lowest costs were associated with obesity (BMI 30–35 kg/m^2) and the highest with underweight (BMI<20 kg/m^2). The optimal BMI for nutritional intervention in COPD remains to be established.

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3. Department of Health (2007) NHS reference costs 2007. www.doh.gov.uk