Undernutrition in hospitals

We welcome the commentary of Elia & Stratton (2000) on our paper (Corish et al. 2000) and hope that a wider debate will follow on how we should define undernutrition. To help in that debate, we would like to clarify some of the methodological issues raised in the commentary. For ease of comparison with previously published reference data, we measured mid-arm circumference and triceps skinfold thickness (TSF) of the right arm in patients aged under 65 years (Bishop et al. 1981) and the left arm in those aged ≥65 years (Burr & Phillips, 1984). McWhirter & Pennington (1994) did not specify which arm was measured in their subjects.

We measured knee height using the equipment and procedure employed by Chumlea et al. (1985). Although this method was originally validated in elderly white Americans, knee height was also reported to reflect accurately standing height in elderly people living in Edinburgh, UK (Bannerman et al. 1996). We found a good correlation between knee height and standing height in a small number (n 36) of our patients for whom both measures were available (mean difference 1 cm; 95 % limits of agreement −2.2 cm to +3.1 cm).

The criteria used to define undernutrition in the Dundee, Scotland, UK, study were a BMI <20 kg/m² and a mid-arm muscle circumference (MAMC) or TSF <15th percentile compared with the reference data. We found a number of patients who had a BMI <20 kg/m² but whose MAMC or TSF were above the 15th percentile. This has been found in all studies using the Dundee criteria (Edington et al. 1996, 1997, 2000). Like Elia & Stratton (2000), we are perplexed that fewer patients had a BMI <20 kg/m² than the total number undernourished in the Dundee study (McWhirter & Pennington, 1994).

Elia & Stratton (2000) wondered how we calculated the 15th percentile. It is only possible to derive a precise value for the 15th percentile if one has access to the raw data from which the reference tables were developed. Lacking this data, we estimated the 15th percentile by adding a third of the difference between the 10th and 25th percentiles to the figure given for the 10th percentile. However, any inaccuracy in our method of estimating the value of the 15th percentile could not account for the discrepancy in the prevalence of undernutrition between Dublin, Republic of Ireland, and Dundee. Interestingly, the most recent study examining the prevalence of undernutrition in the UK has reported a prevalence of only 7 % using the criteria of McWhirter and Pennington (Edington et al. 2000). According to the authors, the lower prevalence could partly be explained by the omission of a number of the sickest patients who could not be measured or who could not give informed consent. This could not explain the lower prevalence we found in Dublin, as informed consent was obtained from the next of kin if the patient was unable to provide it and we used surrogate measures of height (n 95) and weight (n 50) when these could not be measured directly. This was done to ensure that a representative sample was obtained, including the sickest patients.

We would like to draw attention to two small errors made by Elia & Stratton (2000). First, they say the possibility exists that the population in Dublin is leaner than in Dundee when we assume they mean the reverse. Second, we measured every 10th patient in the larger and every 3rd patient in the smaller hospital, not the reverse as incorrectly understood by Elia & Stratton (2000).

In conclusion, we agree that defining disease-related malnutrition is a goal worth pursuing. We wish to urge all involved in the nutritional management of patients in hospital to gather outcome data on patients at nutritional risk. More complete information is needed to provide a reliable perspective of the benefits and risks of our therapeutic nutritional interventions.

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References


