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Are orthopaedic patients with fractured hips more malnourished than patients undergoing elective hip surgery?

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Malnutrition is a widespread problem in hospitalised elderly orthopaedic patients. A recent large nutrition screening undertaken by BAPEN⁽¹⁾ in the UK has revealed that 15% of patients in orthopaedic and trauma wards were malnourished. Differences in body weight between elderly patients with fractured hips and healthy elderly individuals indicate that malnutrition may increase susceptibility to fractures⁽²⁾. The aim of the present study was to compare the nutritional status of elderly patients presenting with an acute neck-of-femur fracture and those being admitted for an elective total hip replacement.

Fifty-nine patients aged ≥ 65 years were admitted to the Royal Berkshire NHS Foundation Trust (RBFT), of whom thirty (mean age 83.7 (sd 6.1) years) were admitted with a fractured neck of femur (acute) and twenty-nine (74 (sd 6.1) years) were admitted for a total hip replacement (elective). Admission blood samples provided serum for the measurement of albumin and prealbumin on the VITROS 5.1 FS chemistry system (Ortho Clinical Diagnostics, Cardiff, South Glamorgan, UK), anthropometric measurements were undertaken and the nutritional risk score (NRS, local nutrition screening tool⁽³⁾ currently in use in RBFT, a modified version of the original nutrition risk score⁽⁴⁾) calculated.

Variables	Acute		Elective	
	Mean	SD	Mean	SD
BMI (kg/m ²)	23.6	4.4	27*	4.7
MUAC (cm)	28.2	4.1	31.2*	4.8
AMC (cm)	21.6	2.8	23.9*	4.2
Triceps skinfold (cm)	15.8	5.8	17.5	6.6
NRS	1.9	1.6	1.0*	1.4
Prealbumin (mg/dl)	21.4	6.0	25.9*	5.7
Albumin (mg/dl)	39.3	5.6	43.4*	3.6

MUAC, mid upper arm circumference; AMC arm muscle circumference. Mean values were significantly different from those for acute group: * $P < 0.05$.

The acute group was older ($P < 0.001$) and was more malnourished compared with the elective group, as determined by anthropometry (BMI, $P < 0.05$; mid upper arm circumference, $P < 0.05$; arm muscle circumference, $P < 0.05$; biceps and subscapular skinfold thicknesses, $P < 0.05$ for both), biochemistry (albumin, $P < 0.01$; prealbumin, $P < 0.01$) and nutrition risk score ($P < 0.05$). The results showed that 17% of the acute group and 3% of the elective group had three or more variables consistent with malnutrition.

Elderly patients being admitted with acute hip fractures represent a frailer and more malnourished group of the elderly compared with those being admitted for elective hip surgery. It is well documented that poor nutritional status results in poorer clinical outcome, increased hospital stay and complication rate⁽⁵⁾. These at-risk patients should therefore be identified early in their admission to ensure adequate nutrition during their hospital stay and hence lead to better clinical outcome.

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