

Differences in Albumin Levels Among Different Ethnicities

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INTRODUCTION

Malnutrition is common in patients with end stage renal failure undergoing dialysis and often goes unobserved. It is well established that a low serum albumin can be a marker of malnutrition in these patients and is associated with poorer outcomes, particularly excess hospitalization and mortality.

Observation has suggested that Emirati patients are more likely to have a low albumin than expatriate patients, if this is the case the reasons for it are currently unclear and it may well apply to other Ethnic groups.

METHODS

Estimation of serum albumin is part of the monthly routine monitoring process for dialysis patients. Albumin data were collated from 505 haemodialysis patients from within the Emirate of Abu Dhabi and 2315 patients from the UK along with age, gender, nationality and the presence or absence of diabetes for the month of August. The data were analyzed by Chi Squared, Bonferroni and ANOVA where appropriate and logistic regression was undertaken using the variables, gender, age, nationality and the presence of diabetes. $P < 0.05$ was taken as statistically significant.

RESULTS

Albumin averages did not reflect the proportion of Pts with Albumin levels < 35 g/L (Table 2). Logistic regression (Figure 1) suggested that the odd ration of an albumin < 35 g/l for UAE Nationals was 1.58 (95% CI 1.104 – 2.274; $p=0.013$), for UAE of other Ethnicities was 0.97 (95% CI 0.67-1.42; $p=NS$) and for UK of other Ethnicities was 0.68 (95% CI 0.50-0.924; $p=0.14$). When age, gender and the presence of diabetes are included in the logistic regression the OR of a low albumin among the different ethnicities was no longer statistically different from the reference (UK white residents) with the exception of the UK residents of other Ethnicities, who were at significantly at lower risk of hypo albuminaemia (OR=0.685; 95% CI 0.499-0.940; $p=0.019$). The inclusion of dialysis dose in the model did not affect the results.

CONCLUSIONS

Differences in albumin levels among different ethnicities are mainly related to difference in proportion of females, age and diabetics. However, residual unexplained differences between UK whites and of other ethnicities requires further evaluations.

Variable	UAE Nationals	UAE other Ethnicities	UK whites	UK other Ethnicities	p-Value
No.	223	282	1702	613	
Age (years)	63.9 \pm 36.5	55.3 \pm 35.1	67.1 \pm 14.9	59.8 \pm 15.5	< 0.001
Males (%)	51.6	66.3	66.2	58.6	< 0.001
Diabetics (%)	60.5	47.2	20.7	33.1	< 0.001
Kt/V	1.57 \pm 0.44	1.52 \pm 0.29	1.86 \pm 0.56	2.10 \pm 0.77	< 0.001
Albumin (g/L)	37.9 \pm 4.2	39.0 \pm 4.4	34.4 \pm 4.7	35.1 \pm 4.6	< 0.001

Table 1. Demographic characteristics Kt/v and albumin of the four patient groups

Ethnic Group	Albumin < 35 g/l (%)
UAE Nationals	19.3
UAE Expatriates	12.8
UK White	13.1
UK Other	9.3

Table 2. Proportion of patients with a low albumin by Ethnic group

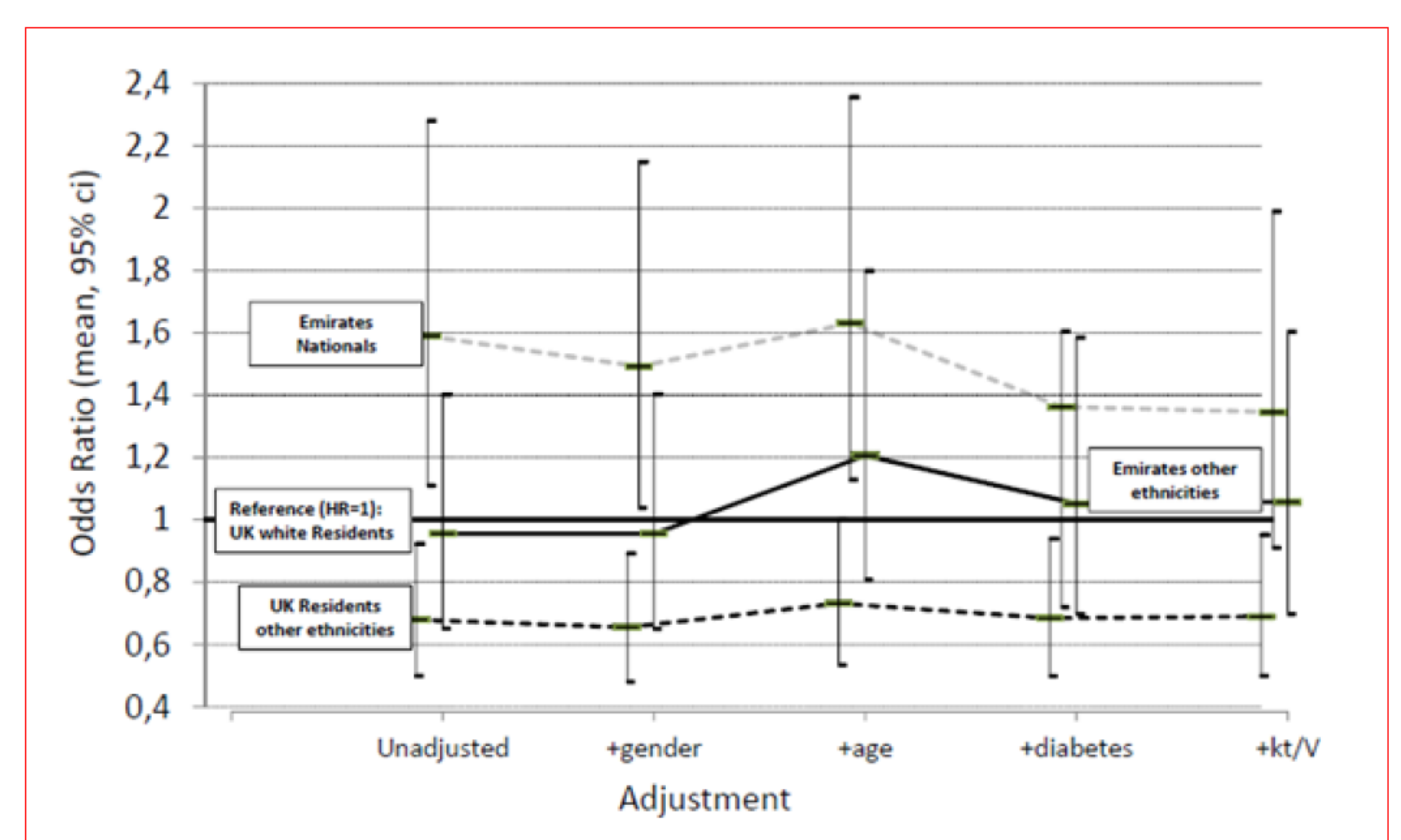


Figure 1. Odds ratio for a low albumin by ethnic origin adjusted for gender, age, the presence of diabetes and dialysis dose.

