

CHAPTER 15

THE EFFECT OF BODY MASS INDEX ON PERITONEAL DIALYSIS OUTCOMES

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INTRODUCTION

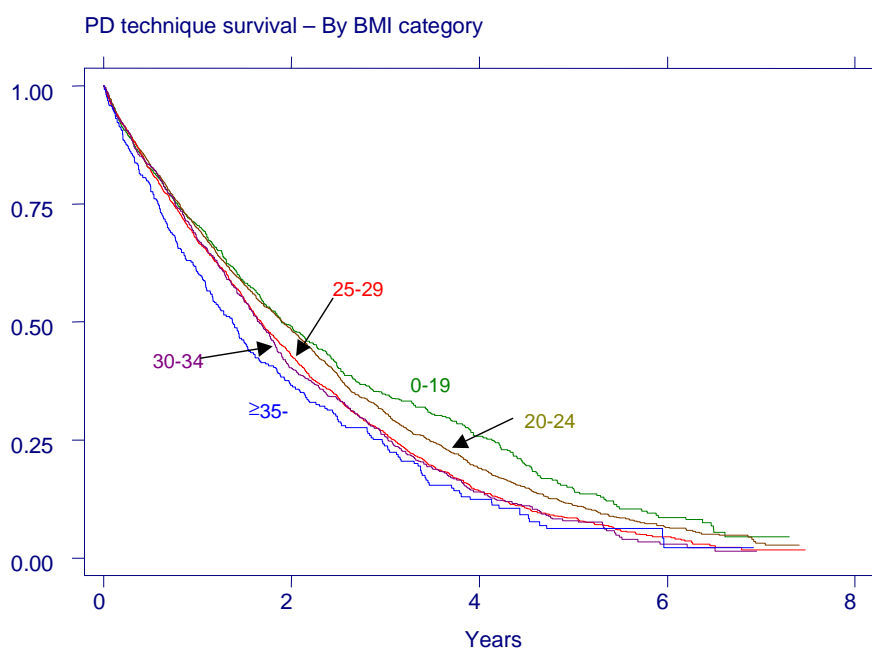
Obesity is a significant risk factor for both morbidity and mortality in the general population. Studies in the haemodialysis population have shown a reduction in death risk with increasing body mass index. In the peritoneal dialysis population, several single centre studies have reported either improved or neutral outcomes (including one Australian centre).

For this analysis all incident peritoneal dialysis patients between 1-Apr-1994 and 30-Sep-2001 were examined with the aim of evaluating the association of BMI at start of dialysis with clinical outcomes among incident Australasian patients.

Figure 15.1

Variable	Number
Total	7081
Age (median [IQR])	61 [46-69]
Male	3719 (53%)
New Zealand	1757 (25%)
Aboriginal/Torres Strait Isl.	447 (6%)
Maori	925 (13%)
Type 1 Diabetes	410 (6%)
Type 2 Diabetes	2233 (32%)
Coronary Artery Disease	2961 (42%)
Cerebrovascular Disease	1177 (17%)
Peripheral Vascular Disease	2187 (31%)
Obese (BMI > 27.5 kg/m ²)	2155 (31%)
Hypertension at RRT start	6096 (86%)
Current Smoking	854 (12%)

Figure 15.2 Technique survival by BMI category.



In addition to BMI a number of other co-variables present at onset of renal replacement therapy were included in the analysis (age, gender, race, diabetes, ischaemic heart disease, peripheral vascular and cerebrovascular disease, lung disease, hypertension, current smoking, peritoneal transporter status, country of treatment).

RESULTS

The base line characteristics are shown in Figure 15.1.

A substantial majority of people were of either high (60%) or high average (48%) transporter status.

On the Kaplan Meier graphs (fig 15.2) there is a suggestion of poorer outcome in the patients with greater BMI for both technique survival and patient survival. On multivariate Cox Regression, obesity (BMI ≥ 30 kg/m²) was associated with a hazard ratio

of 1.66 (1.33-2.08, $P < 0.001$). Other predictors of outcome significant in this model were age category, Australian indigenous status, diabetes and coronary artery disease.

Peritonitis free survival was examined in a similar manner, and in a multivariate model obesity (BMI ≥ 30 kg/m²) was associated with reduced peritonitis free survival, hazard ratio 1.25 (1.09-1.43, $p < 0.001$).

DISCUSSION

In contrast to previously published reports, in incident patients analysed here increasing BMI appears to be associated with an increasing risk of peritonitis and poor outcome. A number of explanations can be surmised, including more difficult local care of Tenckhoff catheter exit sites, greater vulnerability to infection related to poorer diabetic control, as well as increasing severity of co-morbid diseases.

Figure 15.3 Peritonitis-free survival by BMI category.

