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Food intake and lipid risk factors in patients with chronic renal failure treated by haemodialysis or peritoneal dialysis

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The aim of the present study was to compare the effect of haemodialysis (HD) and peritoneal dialysis (PD) on food consumption and lipid cardiovascular risk markers in patients with chronic renal failure (CRF) treated by HD or PD.

A dietary survey was carried out, using a 7 day record and recall, in patients with CRF on dialysis for between 3 and 24 months: fifteen on HD, nine males (M) and six females (F), age 37 (SD 12) years; twelve on PD, seven M and eight F, age 49 (SD 12) years; and compared with seventeen patients with severe renal failure (SCRF), ten M and seven F, age 48 (SD 3) years.

Total energy intake (TEI) was decreased with PD ($P < 0.01$) and HD ($P < 0.05$) compared with SCRF. Expressed as g/kg body weight per d, TEI and protein intake were lower with PD than with HD and SCRF ($P < 0.01$) and lower than recommended values. A decrease in animal-protein intake was noted with PD compared with SCRF ($P < 0.05$). For patients on PD, SFA intakes were higher and MUFA intakes were lower than those for patients on HD and patients with SCRF ($P < 0.05$). High consumption of dairy products and fat (butter, oils and margarine) were found with PD compared with HD and SCRF ($P < 0.05$). High TAG values were found with PD compared with SCRF and HD. Total cholesterol (TC) values were higher with PD than with SCRF. In patients on PD positive relationships were found between TAG values and bread, cereal, rice and pasta intake ($r 0.58$, $P < 0.05$) and between cholesterol values and meat and egg intake ($r 0.45$, $P < 0.05$).

Table. Lipids and atherogenic index in patients with CRF

| | SCRF | | HD | | PD | |
|---------------|------|------|-------|------|---------|------|
| | Mean | SE | Mean | SE | Mean | SE |
| TAG (mmol/l) | 1.55 | 0.17 | 1.50 | 0.53 | 2.30**† | 1.23 |
| TC (mmol/l) | 5.01 | 1.34 | 5.38 | 1.62 | 5.75* | 1.07 |
| TC:HDL-C | 2.51 | 0.67 | 1.70 | 0.21 | 3.10*†† | 0.36 |
| LDL-C:HDL-C | 0.50 | 0.13 | 0.63 | 0.11 | 0.53 | 0.33 |
| Apo A-I:apo B | 1.06 | 0.42 | 0.83* | 0.03 | 0.47 | 0.27 |

HDL-C, LDL-C, HDL- and LDL-cholesterol respectively. Mean values were significantly different from those for SCRF: * $P < 0.05$,

** $P < 0.01$. Mean values were significantly different from those for HD: † $P < 0.05$, †† $P < 0.05$.

PD involves an important reduction in food intake compared with HD. Patients on short-term HD have normal plasma lipid levels; however, dyslipidaemia in patients on PD can be related to qualitative unbalanced food intake.