

# Plasma concentrations of non-esterified fatty acids in chronic renal failure in the United Arab Emirates.

## Abstract

### OBJECTIVE:

In end-stage renal failure, dyslipoproteinemia is linked to risk of cardiovascular disease. Increased concentrations of triacylglycerol-rich, very low density lipoproteins (VLDL) and decreased concentrations of high density lipoproteins (HDL) are usual, whilst total cholesterol and low density lipoprotein (LDL) concentrations are not increased. Non-esterified fatty acids (NEFA) are not transported by lipoproteins, but increased concentrations may also be associated with cardiovascular disease risk. In this study, plasma concentrations of NEFA and other lipids were compared in healthy subjects and patients with end-stage chronic renal failure who were either undialyzed or undergoing peritoneal dialysis or hemodialysis.

### METHODS:

Fasted blood samples for measurement of albumin, total, free and HDL-cholesterol, triacylglycerols and NEFA were taken from 56 apparently healthy subjects and from 48, 28 and 46 patients from the United Arab Emirates during 2002 who were either untreated or on peritoneal or hemodialysis. Hemodialysis subjects were studied immediately before and after a single treatment session.

### RESULTS:

For all groups of patients, total, and LDL-cholesterol were unchanged, triacylglycerols and free cholesterol were raised and HDL-cholesterol concentrations and the percentage of esterified cholesterol were significantly decreased compared to controls. Plasma NEFA concentrations for untreated patients were similar to controls, but were decreased in peritoneal dialysis patients and markedly increased both before and, even more so, after dialysis in hemodialysis patients.

### CONCLUSION:

Patients with end-stage renal failure share common features of dyslipoproteinemia irrespective of whether they are untreated or on peritoneal dialysis or hemodialysis. However, only hemodialysis patients show significantly increased concentrations of NEFA.