

# Effetti della somministrazione di insulina e di aminoacidi sul metabolismo del glucosio e della leucina in pazienti con insufficienza renale in CAPD

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*PAROLE CHIAVE:* Glucosio, Proteine, CAPD

## Glucose and insulin metabolism in CAPD patients

**Background.** The use of CAPD to treat patients with end-stage renal disease has grown considerably. However, little is known on the effect of CAPD treatment on glucose and protein metabolism. Thus, in the present study we evaluated protein and glucose metabolism and substrate utilization in 8 CAPD patients and 14 control subjects.

**Methods.** 1- 14C leucine infusion and indirect calorimetry techniques were employed. At the end of basal period one of the two studies were performed: Study A) Euglycemic insulin clamp (80  $\mu$ U/ml) for 180 min; Study B) Euglycemic insulin clamp was performed in combination with an intravenous amino acid infusion for 180 min.

**Results.** During basal postabsorptive state CAPD patients showed higher glucose oxidation ( $1.75 \pm 0.18$  vs  $1.42 \pm 0.14$  mg/Kg min) and lower lipid oxidation ( $0.43 \pm 0.09$  vs  $0.61 \pm 0.12$  mg/Kg min) than control subjects ( $p < 0.05$  vs control). During the last 60 min of euglycemic insulin clamp (Std A) glucose infusion rate (an index of insulin sensitivity) was similar in both study groups ( $6.37 \pm 0.51$  e  $6.54 \pm 0.62$  mg/Kg min). Basal leucine flux and leucine oxidation were reduced in CAPD patients compared with control subjects ( $1.21 \pm 0.15$  vs  $1.65 \pm 0.07$  e  $0.13 \pm 0.02$  vs  $0.26 \pm 0.02$  mmol/Kg min) ( $p < 0.01$  vs control). During euglycemic hyperinsulinemia (Std A) both leucine flux and oxidation decreased similarly. During euglycemic hyperinsulinemia plus amino acid administration (Std B) protein synthesis rose significantly ( $p < 0.01$  vs basal) in both CAPD ( $1.23 \pm 0.17$  mmol/Kg min) and control subjects ( $1.42 \pm 0.09$  mmol/Kg min).

**Conclusions.** Data show that uremic patients maintained on CAPD: 1) have a preferential utilization of glucose as postabsorptive energy substrate; 2) their anabolic response to substrate utilization and the sensitivity to insulin are normal. (Giorn It Nefrol 2001; 18: 185-9)

**KEY WORDS:** Glucose, Protein, CAPD