HES as an Osmotic Agent for Continuous Ambulatory Peritoneal Dialysis Solutions

N.		Gretz
A.		Hocker
J.J.		Lasserre
M.		Strauch

Clinic of Nephrology, Klinikum Mannheim, University of Heidelberg, Mannheim, FRG

N. Gretz, MD, Clinic of Nephrology, Klinikum Mannheim, University of Heidelberg, D-W-6800 Mannheim (FRG)

Dear Sir,

Today glucose is the only osmotic agent available for continuous ambulatory peritoneal dialysis (CAPD) patients. There is, however, a growing need to find suitable substances as alternatives to a high glucose content in CAPD solutions. One possibility might be to use HES. We recently performed a study with different preparations of HES; G1: HES 100/0.5 3%; G2: HES 200/0.5 3%; G3: HES 450/0.3 3%; G4: HES 450/0.3 6%; G5: controls. The different HES preparations were chosen in order to compare the intraorgan degradation of HES according to its molecular weight and configuration. 40 ml of each preparation were injected 3 times a week for a period of 6 weeks into healthy male Sprague-Dawley rats. Thus each rat received 720 ml of the respective preparation. Each group consisted of 20 rats. After 6 weeks, survival was G1: 90%; G2: 85%; G3: 80%; G4: 85%; G5: 80% ($p = 0.9034$). Thus, no significant difference in survival occurred. At the start and end of the experiment we determined hematocrit, hemoglobin, sodium, potassium, calcium, body weight and total protein in the urine. No change of these parameters could be detected. After 6 weeks the animals were sacrificed. The HES concentration was determined in

Fig. 1. HES concentration in different organs according to the different types of HES injected. Ξ = G1; $\varnothing$ = G2; $\blacksquare$ = G3; S = G4.

the controls (G5). Thus, HES – like any other not completely degradable colloid – is probably not suitable to be used as an alternative osmotic agent in CAPD patients.

liver, spleen, kidneys, and lung. Obviously, a considerable storage occurred during the observation period with any of the HES concentrations (fig. 1). No HES could be detected in