

A New Type of Central Dialysate Production System

H BRASS, K WALTHER and R HEINTZ

Medical Faculty of the University of Aachen,
German Federal Republic

In our haemodialysis unit a new type of dialysate mixing system was constructed. The controlling mechanism of this apparatus is built by a pressure transducer of fluid combined with a carrier frequency bridge. The transducer is

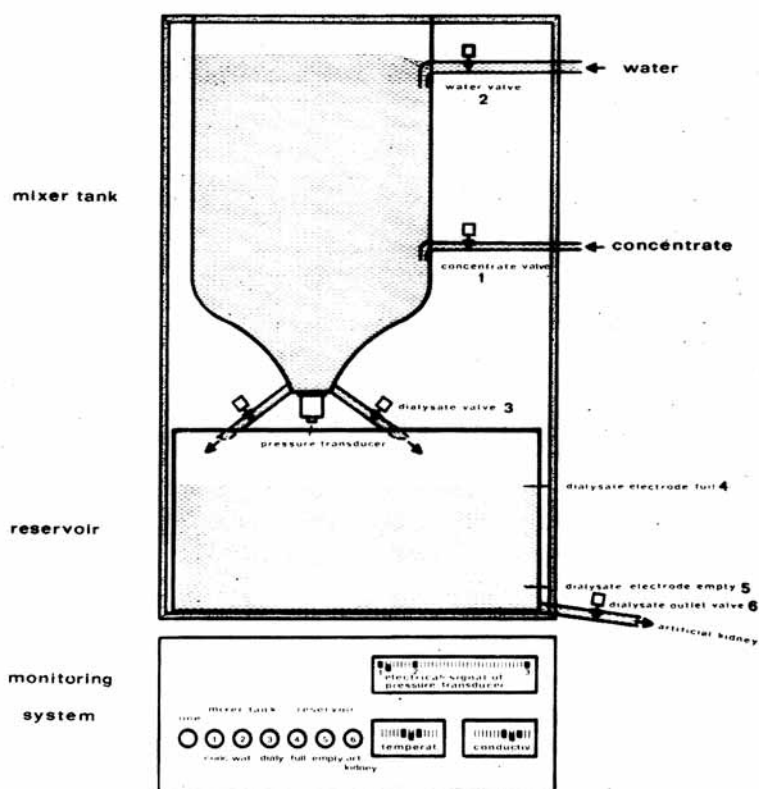


Figure 1. Central dialysate production system A (Aachen)

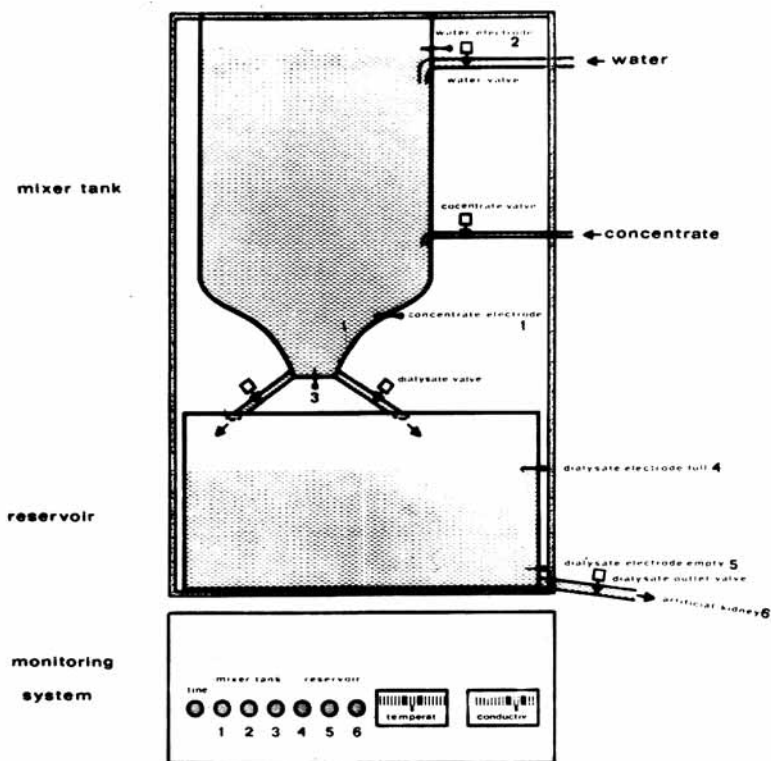


Figure 2. Central dialysate production system B (Aachen)

fixed in the bottom of a conical tank containing about 10 l (Figure 1). First dialysate concentrate runs into the tank. The pressure of this fluid on the transducer is transformed to an electrical signal. When the adjusted voltage functioning as threshold is reached the 'concentrate valve' is closed, a feed back mechanism opens the 'water valve' and water runs into the tank till the second adjusted pressure or voltage respectively is reached. Then the mixed dialysate flows in a reservoir for heating. In the tank the proportioning continues without interruption. By measuring conductivity the mixed solution is permanently checked. Because the transducer is temperature sensitive a second type was built (Figure 2). In this variation two electrodes control the fluid level and the proportioning of the concentrate and water in the mixer tank.

The main advantages of the described dialysate production system are: small proportions (about 40x30x70 cm), good efficiency (4-6 l dialysate/min) and constancy of dialysate concentration. The high flow rate suppresses bacterial contamination.

ACKNOWLEDGMENT

This work was supported by Stiftung Volkswagenwerk.

REFERENCE

Brass, H. and Walther, K. (1969) Medizinische Klinik, 64, 786