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INSTRUCTIONS

FILTRATE COMPARTMENTILIZATION. Ramon G. Duarte, R.N., C.H.N., Valley Dialysis Associates, Inc. Because of individual patient characteristics, membrane properites and manufacturing processes, ultrafiltration characteristics vary from patient to patient. A system is disclosed for measuring the exact ultrafiltration rate inhollow fiber artificial kidneys. The system comprises two shutoff valves for terminating dialysate flow through the dialyzer as part of a momentary intermittent operation. A means of adjusting the dialyzer arterial mean pressure maintains a constant pressure during the measure sequence. A bypass valve which allows ultrafiltrate from the dialyzer (during filtrate compartmentaliza-tion) into a calibrated sampling chamber, allows for the measure of time (in seconds) required to fill the sampling chambers, the volume of fil-trate filling the sampling chambers, and the mean arterial pressure, yielding a direct computation of the ultrafiltration rate in accordance with the equation:

$$UFR = \frac{V}{AMP} \text{ where,}$$

$V = \frac{\text{Volume of filtrate in ml}}{\text{Time in sec/3600 sec/hr}}$  and

$AMP = \frac{\text{Arterial Mean Pressure} = \text{Arterial Pressure} + \text{Venous Resistance}}{2}$

where,

AP = arterial pressure = pre-dialyzer blood pressure and

VR = venous resistance = post-dialyzer blood pressure

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NAME Ramon G. Duarte, R.N., C.H.N.  
HOME ADDRESS 18828 Darter Dr., Canyon Country, CA., 91351  
HOME TELEPHONE 805-252-7366  
WORK ADDRESS 15107 Vanowen St., Van Nuys, CA. Hemo  
WORK TELEPHONE 213-782-6600 Ext. 2740