INFLOW AND OUTFLOW PRESSURES IN TWIN-COIL, SINGLE-COIL AND
CHRON-A-COIL KIDNEY DURING HAEMODIALYSIS AND ULTRAFILTRATION

J. C. FERNÁNDEZ*, W. PANN and M. KESSEL
I. Medical Clinic, Dialysis Unit of the Free University of Berlin, Germany

In 100 dialyses with a twin-coil artificial kidney** were found a mean pressure
\( \frac{\text{inflow pressure} + \text{outflow pressure}}{2} \) of 145.1 ± 17.2 mm Hg (inflow pressure 228.2 ± 24.8
mm Hg; outflow pressure 63.5 ± 13.8 mm Hg) and by ultrafiltration a mean pressure of
267.9 ± 24.4 mm Hg (inflow pressure 327.8 ± 36.4 mm Hg; outflow pressure 208.2 ±
37.5 mm Hg).

Experiments in twin-, single- and chron-a-coil were effected to identify the relationship
between mean pressure and filling of the coil and the dependence of the increase of the mean
pressure on the inflow minute volume.

![Graph](https://via.placeholder.com/150)

**Fig. 1.** Relationship between mean pressure and increase of blood volume in twin-, single- and
chron-a-coil.

* Departamento de Clínica Médica Hospital Militar Central, Buenos Aires, Argentina. Stipend
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** Travenol GmbH, München, Germany.
Fig. 1 shows the logarithmic increase of the mean pressure and the linear increment of blood volume in the coil dialyser unit. When the mean pressure rises, the filling volume increases more quickly at the beginning.

Fig. 2. Relationship between mean pressure and ultrafiltration per minute in twin-, single- and chron-a-coil.

Fig. 3. Mean pressure rise per increase of the inflow minute volume, at varying initial mean pressure in chron-a-coil.
Fig. 2 shows the linear correlation between ultrafiltration and the mean pressure. The ultrafiltration increases in the single- and chron-a-coil about half as fast as in the twin-coil.

Fig. 3 shows how the mean pressure rises with increase of the inflow minute volume in dependence on the initial mean pressure, which depends on the outflow resistance especially. The higher the initial mean pressure is, the more rapidly the mean pressure rises with increase of the inflow minute volume. Therefore one can expect enhanced ultrafiltration and augmented filling volume with the same increase of inflow minute volume, in a dialysis which begins with a higher mean pressure.