CONSTANT PRESSURE DEVICE FOR USE WITH KIIL KIDNEY

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In pumpless systems using hydrostatic pressure to propel the dialysis fluid (see Figure 1) the effective hydrostatic pressure \( h \) decreases during dialysis but at some time may be above diastolic blood pressure. This also can occur with the regular Kiil pump-driven dialysis fluid system if the outflow tube is obstructed. If the cellophane membranes burst and the dialysis fluid pressure exceeds diastolic blood pressure the patient will receive an infusion of dialysis fluid which may be lethal. To prevent this a pressure equilizer has been designed (Figure 2). It consists of a glass float chamber and safety "blow off" side arm. This keeps the hydrostatic pressure in the kidney constant; this is equal to the height of the fluid level in the float chamber \( h^1 \) and is independent of the height of the surface of the dialysis bath fluid \( h \). The apparatus is inexpensive, safe, fool proof and sterilisable by boiling or chemical methods. It can be made by any skilled glassblower, and is obtainable from General Laboratory Supply Co., 104 Rusholme Road, Manchester, 13.
Figure 1. Circuit using the constant-pressure float chamber. \( h \) varies and is not related to the hydrostatic pressure on kidney; \( h' \) is constant.

Figure 2. The float chamber in detail.