

Peritoneal dialysis solution

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Solutions for peritoneal dialysis are preparations for intraperitoneal use which contain electrolytes in a similar concentration to that in plasma, and also contain glucose or another suitable osmotic agent. Peritoneal dialysis solutions always contain sodium, chloride, and hydrogen carbonate or a precursor; they may also contain calcium, magnesium, and potassium.

In renal failure haemodialysis is the preferred method to correct the accumulation of toxins, electrolytes and fluid. Peritoneal dialysis is less efficient than haemodialysis, but it is preferred in children, diabetic patients, and patients with unstable cardiovascular disease; it is also used in patients who can manage their condition, or those who live far from a dialysis centre. It is unsuitable for patients who have had significant abdominal surgery.

In peritoneal dialysis, the solution is infused into the peritoneal cavity, where exchange of electrolytes takes place by diffusion and convection, and excess fluid is removed by osmosis, using the peritoneal membrane as an osmotic membrane. There are two forms of peritoneal dialysis:

- *continuous ambulatory peritoneal dialysis* (CAPD), in which dialysis is performed manually by the patient several times each day
- *automated peritoneal dialysis* (APD), in which dialysis is performed by machine overnight.

The main complication of peritoneal dialysis is peritonitis, which often results from poor exchange technique; infections of the catheter exit site may also occur, again because of poor technique. With long-term dialysis progressive structural changes to the peritoneal membrane occur, ultimately resulting in dialysis failure.

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Peritoneal dialysis solution is a complementary preparation

Dialysis solution (Solution for peritoneal dialysis), intraperitoneal dialysis solution of appropriate composition

Uses:

to correct electrolyte imbalance and fluid overload, and to remove metabolites, in renal failure

Contraindications:

abdominal sepsis; previous abdominal surgery; severe inflammatory bowel disease

Precautions:

care required with technique to reduce risk of infection; warm dialysis solution to body temperature before use; some drugs may be removed by dialysis

Dosage:

Individualized according to clinical condition, and based on blood results

Adverse effects:

infection, including peritonitis; hernia; haemoperitoneum; hyperglycaemia, protein malnutrition; blocked catheter