The peritoneal dialysis system can be desired as nature’s edition of a capillary of kidney. It includes a base, a dialysate cassette, a condenser, a boiling vessel, a sterilizing UV lamp, a fluid storage vessel, a fluid mixer, a boiling vessel demineralizing system, and an optional fluid storage vessel rinsing system (1). It is probably indicative solute exchange largely between peritoneal capillary blood and dialysis solution in the cavity of peritoneum. Membrane of dialysis included of the vascular wall, the mesothelium, the interstitium, and adjoining fluid films. When discussing about removal of solutes from the bodily fluids by dialysis, we generally talk about two processes: diffusion and convection (2). On the other hand, it is important to appreciate that rates of diffusion for various solutes vary by weight of molecule, thus urea and other small solutes are quickly eliminated in the first few hours and after four hours only coarse particles remain (1).

About peritoneal solutions we can see that ancient Egyptians were the first to describe the peritoneal cavity in almost 3000 BC, the concept of peritoneal dialysis is new. In the late 19th century, Wegner, a German investigator, used first peritoneal solutions in animals; he reported that hypertonic solutions increased in volume when injected into the peritoneal cavity; also additional investigations found that hypotonic solutions decreased peritoneal fluid volume (3). From that time onwards, various investigators later evaluated the efficacy of treating uremia by induction fluids into the peritoneal cavity. For example, Szeto and Li induced saline solution in the peritoneal cavity of uremic guinea pigs and then treated a uremic lady with peritoneal dialysis solution containing saline (4). Accordingly, Heusser and Werder (5) added dextrose to peritoneum to improve ultrafiltration. Likewise, In 1938, Rhoads (6) added lactate to the peritoneum to correct acidosis.

As seen in studies in the techniques section, several different methods are available for performing peritoneal dialysis including continuous ambulatory peritoneal dialysis (CAPD), continuous cycling peritoneal dialysis (CCPD), ambulatory peritoneal dialysis (APD) and chronic peritoneal dialysis (CPD) that is the most common dialysis treatment modality used to treat pediatric patients with end-stage kidney failure predominantly in children less than five years of age (3).

Disadvantages of peritoneal dialysis
With all the way who there are but by any method the clearance of fluids per unit time is less with peritoneal dialysis rather than hemodialysis also many complications have been reported. The most frequent complication is infection, which may lead to catheter loss and discontinuation of peritoneal dialysis. Also there are significant noninfectious complications of peritoneal dialysis catheters that include abdominal wall herniation, outflow failure, pericatheter leak (7). Also it remains to be the primary reason why patients switch from peritoneal dialysis to hemodialysis. Peritonitis is most often due to contamination with skin bacteria, such as Staphylo-
coccus aureus and Staphylococcus epidermidis accounting for the majority of cases. It is seems that the whole peritoneum and the defense mechanisms of the mesothelium maybe the most important barriers to the development of peritonitis in peritoneal dialysis patients and play an important role in limiting the infection to the peritoneum, as the place, which peritonitis does develop (5).

Advantages of peritoneal dialysis
With advances that have occurred in different parts, complications of earlier methods of peritoneal dialysis are eliminated by a new technique of intermittent dialysis utilizing commercially ready electrolyte solutions, special catheters, and a closed system of injection and drainage. This was mechanically successful in 76 patients. Circumstances treated satisfactorily included barbiturate poisoning, hypercalcemia, acute renal failure, intractable edema, hepatic coma and chronic uremia (5). Also although peritoneal lavage is less efficient than the artificial kidney, but it is easier to use. On the other hand, the incidence of systemic bacteremia in association with peritoneal dialysis is extremely low (<1%), in contrast to the reported 30% with surgical peritonitis and 39% to 76% of spontaneous peritonitis in cirrhotic patients with ascites (7).

Conclusion
As it was seen, there are various methods of dialysis, that each has advantages and disadvantages, so we should take appropriate action based on the patient’s status and conditions.

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References