

DISORDERS OF GENITO URINARY SYSTEM

M.S.N.-1

UNIT - 6

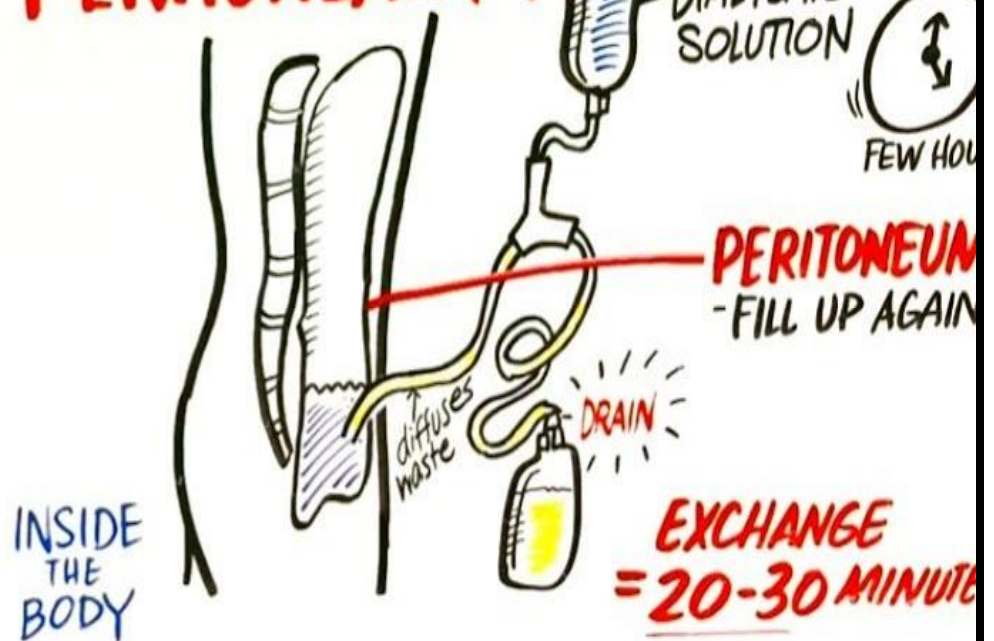
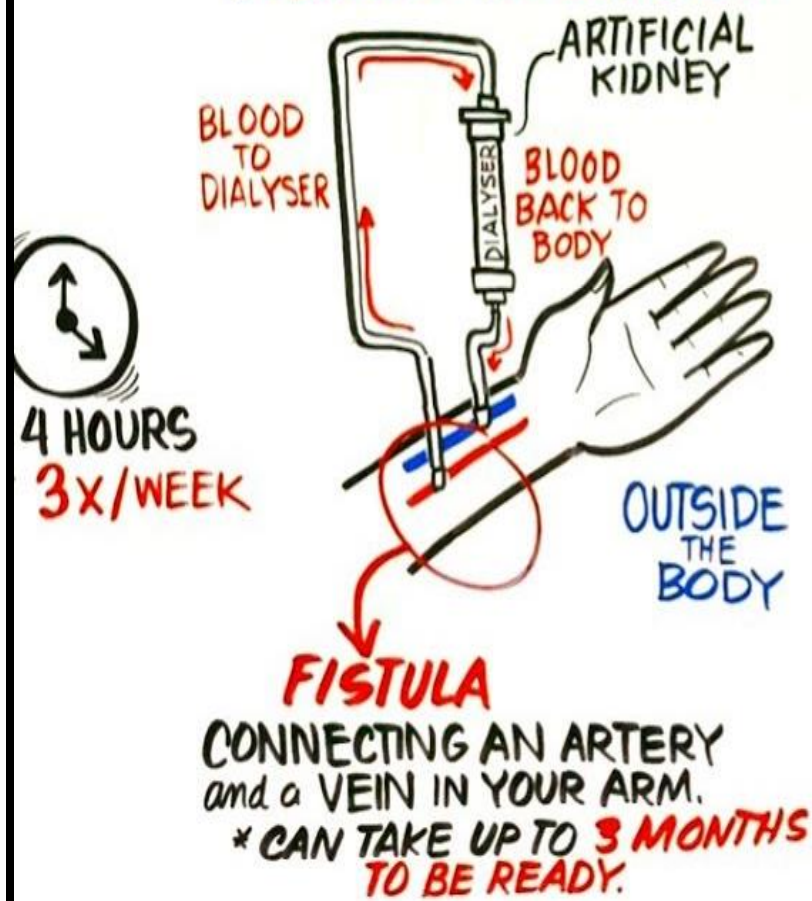


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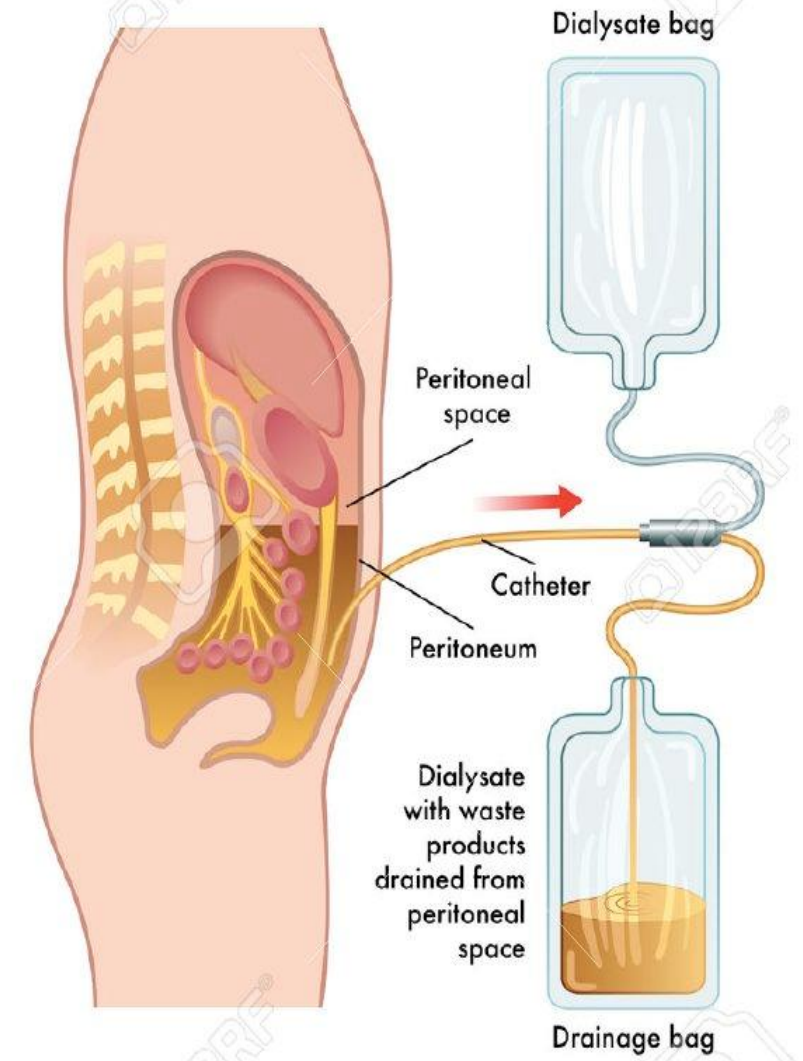
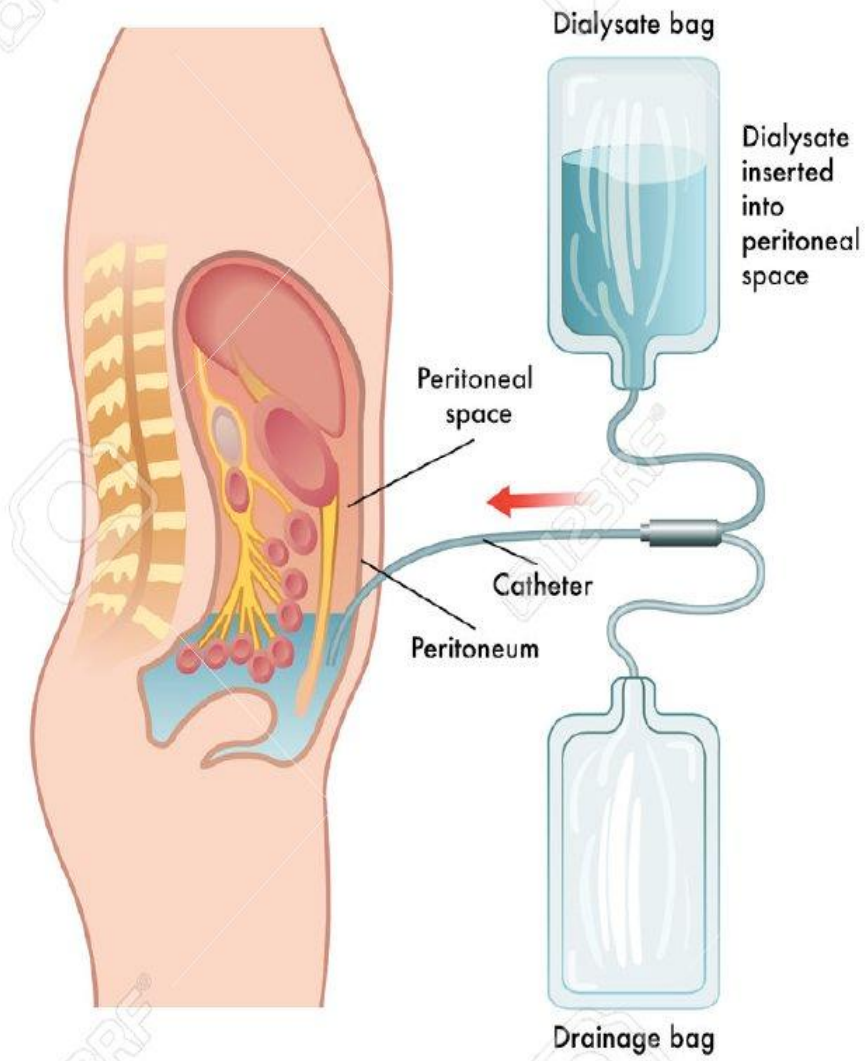
DIALYSIS

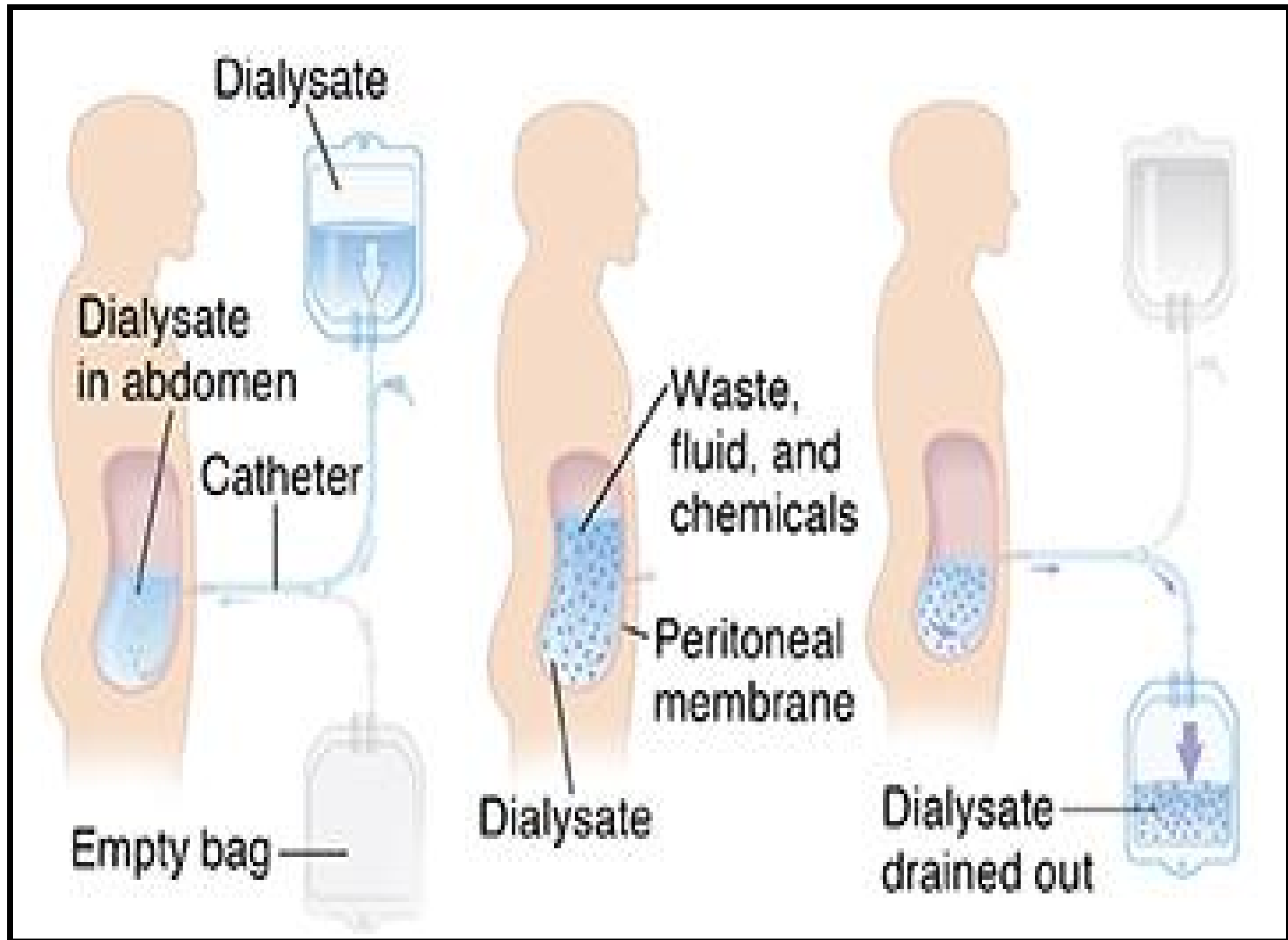
HEMODIALYSIS

PERITONEAL-(PD)



Peritoneal Dialysis





q DEFINITION:-

“PERITONEAL DIALYSIS IS A TYPE OF DIALYSIS WHICH USES THE PERITONEUM IN A PERSON'S ABDOMEN AS THE MEMBRANE THROUGH WHICH FLUID AND DISSOLVED SUBSTANCES ARE EXCHANGED WITH THE BLOOD.”

Ø THE GOALS OF PERITONEAL DIALYSIS:-

- TO REMOVE TOXIC SUBSTANCES AND METABOLIC WASTES AND,
- TO RE-ESTABLISH NORMAL FLUID AND ELECTROLYTE BALANCE.

Ø INDICATION FOR PERITONEAL DIALYSIS:-

- UNABLE OR UNWILLING TO UNDERGO HEMODIALYSIS
- UNABLE OR CONTRAINDICATION FOR KIDNEY TRANSPLANTATION

q PRINCIPLES OF PERITONEAL DIALYSIS:-

- DIFFUSION:- UREA AND CREATININE, METABOLIC END PRODUCTS IN THE BLOOD ARE MOVE FROM AN AREA OF HIGHER CONCENTRATION (THE PERITONEAL BLOOD SUPPLY) TO AN AREA OF LOWER CONCENTRATION (THE PERITONEAL CAVITY) ACROSS A SEMIPERMEABLE MEMBRANE (THE PERITONEAL MEMBRANE).
- OSMOSIS:- EXCESS WATER IS REMOVED FROM THE BLOOD BY OSMOSIS, IN WHICH; WATER MOVES FROM AN AREA OF HIGHER SOLUTE CONCENTRATION (THE PERITONEAL BLOOD SUPPLY) TO AN AREA OF LOWER SOLUTE CONCENTRATION (THE PERITONEAL CAVITY) ACROSS A SEMIPERMEABLE MEMBRANE (THE PERITONEAL MEMBRANE).

- ULTRAFILTRATION:-

- WATER REMOVAL OCCURS IN PERITONEAL DIALYSIS THROUGH AN OSMOTIC GRADIENT CREATED BY USING A DIALYSATE FLUID WITH A HIGHER GLUCOSE CONCENTRATION.

- q PROCEDURE:-

- 1) PREPARING THE PATIENT
- 2) PREPARING THE EQUIPMENT
- 3) PERFORMING THE EXCHANGE

Ø PREPARING THE PATIENT:-

- THE NURSE EXPLAINS THE PROCEDURE TO THE PATIENT AND OBTAINS SIGNED CONSENT FOR IT.**
- BASELINE VITAL SIGNS, WEIGHT, AND SERUM ELECTROLYTE LEVELS ARE RECORDED.**
- THE PATIENT IS ENCOURAGED TO EMPTY THE BLADDER AND BOWEL TO REDUCE THE RISK OF PUNCTURING INTERNAL ORGANS.**
- BROAD-SPECTRUM ANTIBIOTIC AGENTS MAY BE ADMINISTERED TO PREVENT INFECTION.**
- THE NURSE ALSO ASSESSES THE PATIENT'S ANXIETY ABOUT THE PROCEDURE AND PROVIDES PSYCHOLOGICAL SUPPORT AND INSTRUCTION.**

Ø PREPARING THE EQUIPMENT:-

- THE NURSE CONSULTS WITH THE PHYSICIAN TO DETERMINE THE CONCENTRATION OF DIALYSATE TO BE USED AND THE MEDICATIONS TO BE ADDED TO IT.
- BEFORE MEDICATIONS ARE ADDED, THE DIALYSATE IS WARMED TO BODY TEMPERATURE TO PREVENT PATIENT DISCOMFORT AND ABDOMINAL PAIN.
- HEPARIN, POTASSIUM CHLORIDE, ANTIBIOTICS, INSULIN(IF DM) ARE ADDED IMMEDIATELY BEFORE THE SOLUTION IS INSTILLED.
- ASEPTIC TECHNIQUE IS CRUCIAL, & STRICKLY SHOULD BE FOLLOW.
- THE NURSE ASSEMBLES THE ADMINISTRATION SET AND TUBING. THE TUBING IS FILLED WITH THE PREPARED DIALYSATE TO REDUCE THE AMOUNT OF AIR ENTERING THE CATHETER AND PERITONEAL CAVITY

- IDEALLY, THE PERITONEAL CATHETER IS INSERTED IN THE OPERATING ROOM TO MAINTAIN SURGICAL ASEPSIS AND MINIMIZE THE RISK OF CONTAMINATION.

- BEFORE THE PROCEDURE, THE SKIN IS PREPARED WITH A LOCAL ANTISEPTIC TO REDUCE SKIN BACTERIA AND THE RISK OF CONTAMINATION AND INFECTION.

- THE PHYSICIAN ANESTHETIZES THE SITE WITH A LOCAL ANESTHETIC AGENT BEFORE MAKING A SMALL INCISION OR STAB WOUND IN THE LOWER ABDOMEN, 3 TO 5 CM BELOW THE UMBILICUS.

Ø PERFORMING THE EXCHANGE:-

- PERITONEAL DIALYSIS INVOLVES A SERIES OF EXCHANGES OR CYCLES. AN EXCHANGE IS DEFINED AS THE INFUSION, DWELL, AND DRAINAGE OF THE DIALYSATE.

✓ **THE INFUSION:-** THE DIALYSATE IS INFUSED BY GRAVITY INTO THE PERITONEAL CAVITY. A PERIOD OF ABOUT 5 TO 10 MIN. IS USUALLY REQUIRED TO INFUSE 2 L OF FLUID.

✓ **DWELL:-** ALSO CALLED EQUILIBRATION, IT IS TIME ALLOWS DIFFUSION AND OSMOSIS TO OCCUR.

DIFFUSION OF SMALL MOLECULES, SUCH AS UREA AND CREATININE, PEAKS IN THE FIRST 5 TO 10 MIN OF THE DWELL TIME.

✓ **DRAINAGE:-** THE TUBE IS UNCLAMPED AND THE SOLUTION DRAINS FROM THE PERITONEAL CAVITY BY GRAVITY THROUGH A CLOSED SYSTEM. DRAINAGE IS USUALLY COMPLETED IN 10 TO 30 MIN. THE DRAINAGE FLUID IS NORMALLY COLORLESS OR STRAW-COLORED AND SHOULD NOT BE CLOUDY.

- BLOODY DRAINAGE MAY BE SEEN IN THE FIRST FEW EXCHANGES AFTER INSERTION OF A NEW CATHETER BUT SHOULD NOT OCCUR AFTER THAT TIME.
- THE ENTIRE EXCHANGE (INFUSION, DWELL TIME, AND DRAINAGE) TAKES 1 TO 4 HOURS, DEPENDING ON THE PRESCRIBED DWELL TIME.
- THE NUMBER OF CYCLES OR EXCHANGES AND THEIR FREQUENCY ARE PRESCRIBED BASED ON THE PATIENT'S PHYSICAL STATUS AND ILLNESS.

qCOMPLICATIONS:-

- PERITONITIS
- BLEEDING
- HIATAL HERNIA / INCISIONAL HERNIA
- BACK PAIN / ABDOMINAL PAIN

- **METHODS / TYPES OF PERITONEAL DIALYSIS:-**
- ACUTE INTERMITTENT PERITONEAL DIALYSIS (AIPD)
- CONTINUOUS AMBULATORY PERITONEAL DIALYSIS (CAPD)
- CONTINUOUS CYCLIC PERITONEAL DIALYSIS (CCPD)

VIDEO LINKS

<https://www.youtube.com/watch?v=4S7tThszxAs>

◆ CAPD ◆

<https://www.youtube.com/watch?v=IWufgduExvE>

◆ AUTOMATED P.D. ◆

<https://www.youtube.com/watch?v=eVnaW6C7ZHk>