ALTOOSI UNIVERSITY / College of Nursing Critical Care Nursing (Practical) 4 Stage (2024– 2025) lect.Keep accurate intake and output records related to the amount of dialysis fluid entering the peritoneal cavity and the amount in the drainage.Provide adequate hydration to patients at risk of dehydration: a. Surgical patients before, during, and after surgery b. Patients undergoing intensive diagnostic studies requiring fluid restriction and contrast agents (eg, barium enema, intravenous pyelograms), especially elderly patients who may have marginal renal reserve ALTOOSI UNIVERSITY / College of Nursing Critical Care Nursing (Practical) 4 Stage (2024– 2025) lect.Nephrotoxic agents such as: a. Aminoglycoside antibiotics (gentamicin, tobramycin) b. Radiopaque contrast agents c. Heavy metals (lead, mercury) d. Solvents and chemicals (ethylene glycol, carbon tetrachloride, arsenic) e. Nonsteroidal anti–inflammatory drugs (NSAIDs) f. Angiotensin–converting enzyme inhibitors (ACE inhibitors) 3.Prolonged renal ischemia resulting from: a. Pigment nephropathy (associated with the breakdown of blood cells containing pigments that in turn occlude kidney structures) b. Myoglobinuria (trauma, crush injuries, burns) c. Hemoglobinuria (transfusion reaction, hemolytic anemia) 2.Nursing Diagnoses & Interventions for Clients with ESRD ND: Fluid volume excess & electrolyte imbalance related to decrease urine output & dietary & fluid restriction.Volume depletion resulting from: a. Hemorrhage b. Renal losses (diuretics, osmotic diuresis) c. Gastrointestinal losses (vomiting, diarrhea, nasogastric suction) 2.Acute Renal Failure Acute renal failure (ARF) is a reversible clinical syndrome where there is a sudden and almost complete loss of kidney function (decreased GFR) over a period of hours to days with failure to excrete nitrogenous waste products and to maintain fluid and electrolyte.Urinary tract obstruction, including: a. Calculi (stones) b. Tumors ALTOOSI UNIVERSITY / College of Nursing Critical Care Nursing (Practical) 4 Stage (2024– 2025) c. Benign prostatic hyperplasia d. Strictures e. Blood clots lect.Bone disease and metastatic and vascular calcifications due to retention of phosphorus, low serum calcium levels, abnormal vitamin D metabolism, and elevated aluminum levels.encourage high calorie, low protein, low potassium & low sodium snacks between mealsto reduce sources of restricted food & provides calories for energy while low protein for growth & tissue healing.It is involves the introduction of sterile dialyzing fluid through an implanted catheter into the abdominal cavity, the dialysate bathes the peritoneal membrane.Renal cells that cannot concentrate urine Increased GFR in this phase contributes to the passive loss of electrolytes which requires the administration of IV crystalloids to maintain hydration.During this phase, edema decreases, the renal tubules begin to function adequately and fluid and electrolyte balance are restored (if damage was significant, BUN and Creatinine may never return to normal levels).Anemia due to decreased erythropoietin production, decreased RBC life span, bleeding in the GI tract from irritating toxins and ulcer formation, and blood loss during hemodialysis.within dialysis machine, blood and dialysate compartment are separated by semi permeable membrane .blood is removed from the arterial end of the vascular access device, pumped through the machine at a rate of 100 to200 ml/min, and returned to the body through the venous access.Impaired cardiac efficiency resulting from: a. Myocardial infarction b. Heart failure c. Dysrhythmias d. Cardiogenic shock ALTOOSI UNIVERSITY / College of Nursing Critical Care Nursing (Practical) 4 Stage (2024– 2025) lect.Neuromuscular/Behavioral signs: a. Headache b. Insomnia c. Confusion/ disorientation d.Asterixis e. Muscle weakness and cramping f. Peripheral Neuropathy h. Body

image/ Self-Concept disturbances 6.Ali Hasan Alghazali ND: Altered nutrition less than body requirement RT dietary restriction Goal:maintain adequate nutritional status.Assess factors contributing to fatigue (anemia, fluid &electrolyte imbalance, depression) to provide indication of severity of fatigue.It is more likely to occur in acute renal failure or when blood urea nitrogen levels are very high(exceeding 150 mg/L).Manifestation includes: Head ache.Ali Hasan Alghazali Diuretic Phase : this phase occurs when the source of obstruction has been removed but the residual scarring and edema of the renal tubules remains.Monitor central venous and arterial pressures and hourly urine output of critically ill patients to detect the onset of renal failure as early as possible.Hyperkalemia due to decreased excretion, metabolic acidosis, catabolism, and excessive intake (diet, medications, fluids).Types of dialysis Hemodialysis (HD) HDis the most commonly used method of dialysis and a highly efficient for removing waters and waste products from the body.During peritoneal dialysis, blood vessels in the abdominal lining (peritoneum) fill in for the kidneys, with the help of a fluid (dialysate) that flows into and out of the peritoneal space.By the processes of osmosis, diffusion, and active transport, excess fluid & solutes travel through peritoneal membrane and into the dialyzing fluid.The cycler automatically fills the abdomen with dialysis solution, allows it to dwell there and then drains it to a sterile drainage bag that empty in the morning.Contraindication of PD Peritoneal dialysis is not recommended if the patents have: extensive surgical scars in the abdomen.During this dwell time, waste, chemicals and extra fluid in the blood pass from tiny blood vessels (capillaries) in the lining of the abdominal cavity (peritoneum) into the dialysis solution.Ali Hasan Alghazali c. Patients with neoplastic disorders or disorders of metabolism (eg, gout) and those receiving chemotherapy 2.To prevent toxic drug effects, closely monitor dosage, duration of use, and blood levels of all medications metabolized or excreted by the kidneys.Gastrointestinal Signs: a. Anorexia b. Nausea/Vomiting c. Diarrhea or Constipation d. Mucosal Ulcerations- GI Bleeding 4.Pericarditis, pericardial effusion, and pericardial tamponade due to retention of uremic waste products and inadequate dialysis.Instruct patient to avoid people with infections Knowledge deficit related to lack of information about diet, meds, dialysis, self-monitoring 1.Teach patient/family about dietary restrictions and rationale for these.Procedure of PD In peritoneal dialysis, a sterile cleansing solution (dialysate) flows through the catheter into the abdomen.Ali Hasan Alghazali Clinical Manifestations of ARF The following signs and symptoms are consistent with acute renal failure: 1.Take precautions to ensure that the appropriate blood is administered to the correct patient in order to avoid severe transfusion reactions, which can precipitate renal failure.Approximately 90-95% of nephrons are affected by CRF, damage is permanent and irreversible, and the disease is fatal without renal replacement therapy such as dialysis or transplant.Endocrine/ metabolic Signs a. Calcium/Phosphorus Imbalance- Renal osteodystrophy b. Metabolic Acidosis 7.Hemodialysis HD is a process of cleansing the blood of accumulated wasteproducts and restore fluid and electrolyte balance.Ali Hasan Alghazali PD works by using peritoneal membrane, which is inside the abdomen as a semi permeable membrane.Oliguric/Anuric Phase : this phase usually lasts between 8-14 days and is characterized by further damage to the renal tubular wall and membranes.Vasodilation resulting from: a. Sepsis b. Anaphylaxis c. Antihypertensive medications or other medications that cause vasodilation B: Intrarenal Failure 1.To prevent infections from ascending in the urinary tract, give meticulous care to

patients with indwelling catheters.b. Pericarditis/ Pericardial Effusion c. Hypertension d. Congestive Heart Failure e. Hyperkalemia and edema 2.Hypertension due to sodium and water retention and malfunction of the renin–angiotensin–aldosterone system.Painful muscle cramping occurs late in dialysis as fluid and electrolytes rapidly leave the extracellular space.Dysrhythmias may result from electrolyte and PH changes or from removal of antiarrhythmic medications during dialysis.Peritoneal Dialysis (PD) Definition Peritoneal dialysis is a way to remove waste products from the blood when the kidneys can no longer do the function adequately.Continuous Ambulatory P.D. (CAPD) : Between 1.5 and 3 liters of fluid is run in four times a day, exchanging for the fluid from the previous exchange.Continuous Cycle P.D. (CCPD) : a machine called an automated cycler performs three to five exchanges at night while you sleep.An infection can develop at the site where the tube (catheter) is inserted to carry the cleansing fluid into and out of your abdomen.Infectious processes such as: a. Acute pyelonephritis b. Acute glomerulonephritis C: Postrenal failure 1.Continually assess renal function (urine output, laboratory values) when appropriate.Ali Hasan Alghazali Chronic Renal Failure Chronic renal failure is a progressive, irreversible kidney injury.Stage 3 (Moderate CRF)– GFR 30–59 ml/min– moderate decrease in GFR.buildup of waste– Not enough healthy nephrons to prevent it. There is an increase in BUN, creatinine, uric acid and phosphorous.Psychosocial Signs a. Denial b. Depression/ Grief c. Dependency ALTOOSI UNIVERSITY / College of Nursing Critical Care Nursing (Practical) 4 Stage (2024– 2025) lect.Reproductive a. Amenorrhea b. Testicular atrophy c. Infertility Complications 1.Nursing intervention with Rational o Assess serum electrolyte level to provide base line data.Assist patient to cope with discomforts resulting from restriction to increase patient comfort with dietary restriction.Ali Hasan Alghazali Sensory and perceptual alterations related to uremia 1.The processes involved in hemodialysis are diffusion, osmosis, and ultra– filtration.Diffusion: is the movement of toxins and wastes from an area of greater concentration in the blood to an area to lower concentration in the dialysis.Osmosis: is the removal of excess water from an area of higher solute concentration (blood) to lower solute concentration (the dialysis bath).Nausea and vomiting, diaphoresis, tachycardia, and dizziness are common signs of hypotension.Exsanguination may occur if blood lines separate or dialysis needles accidently dislodge.Peritoneal dialysis differs from hemodialysis as: a. a more commonly used blood–filtering procedure.Each exchange includes filling the abdomen with dialysate fluid, letting the fluid dwell in the abdomen, then draining the fluid.The solution contains a sugar that draws wastes and extra fluid through the capillaries in the peritoneum.When the dwell time is over, the solution, along with waste products drawn from the blood and any excess fluid, drains into a sterile collection bag.Ali Hasan Alghazali Peritoneal dialysis complications Peritonitis.The client should be urinate before insert the catheter into the peritoneum, to prevent the bladder puncture.3.4.5.6.7.8.9.10.3.4.5.6.7.2.3.4.5.1.2.3.4.5.1.2.3.4.5.2.5.6.2.3.2.3.4.2.1.2.3.2.3.4.5.2.3.4.5.6.2.2..2.3.4.5