STANDARD TREATMENT WORKFLOW (STW)

Chronic Kidney Disease (CKD)

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Standard Treatment Workflow (STW) for the Management of CHRONIC KIDNEY DISEASE (CKD)

**ICD-10-N18.3**

**WHAT IS CKD?**
Abnormalities in kidney structure or function, present for >3 months, with implications for health.

**WHAT TO LOOK FOR?**
- History of long-standing nocturia or constitutional symptoms
- Edema, hemorrhagic blisters, pruritic urticarial lesions
- Long-term use of diuretics or herbal medicines
- Family history of kidney disease
- Growth retardation, idiopathic or proximal myopathy
- Unexplained hypertension or normotension
- Congenital anomalies, hypertension, CVG stroke, PVD
- Systemic disease (eg, connective tissue disease)

**EVALUATION OF NEWLY DIAGNOSED PATIENT**
- **CVD:**
  - Depressed cardiac output, diastolic filling pressure, arterial engorgement
  - Reduced stroke volume, cardiac reserve, left ventricular ejection fraction
  - **CVD risk factors:**
  - **CVD risk factors:**
  - Diabetes mellitus, dyslipidemia, hypertension, age, family history, gender, smoking status, physical activity level, body mass index, waist circumference, abdominal obesity, social support, socioeconomic status, education level, occupation, psychological stress

**INITIAL ASSESSMENT FOR**
- **CVD risk factors:**
  - Age ≥ 40 years
  - Multiple cardiovascular risk factors
- **CVD treatment:**
  - Antihypertensives
  - Beta blockers
  - Diuretics
  - Statins
  - Antiplatelet agents

**LIFESTYLE MEASURES FOR ALL CKD PATIENTS:**
- **Weight control:**
  - Dietary fiber, lean protein, low-fat dairy products, whole grains, fruits, vegetables, legumes
- **Physical activity:**
  - Moderate-intensity aerobic exercise, resistance training
- **Healthy eating:**
  - Low-sodium, low-fat, low-cholesterol diet
- **Psychological support:**
  - Counseling for stress management, coping strategies, lifestyle modification

**LOW POTASSIUM FRUITS/VEGETABLES:***
- Apple, pineapple, papaya, pear, banana, avocado, mango, cantaloupe, watermelon, grapefruit, cucumber, green beans, peas, rice, bread

**VITAMIN D THERAPY:**
- Supplement 60,000 units weekly with oral calcium and vitamin D3
- Correction of hypocalcemia
- Activated vitamin D therapy

**NUTRITION:**
- Salt restriction
- Protein 0.6-0.8 g/kg/day
- Do NOT restrict protein unless estimated high protein user (daily, white meat are good protein sources, mix different types of diet)
- Restrict green leafy vegetables if eGFR < 30 ml/min
- Avoid fruit juices, coconut water, and carbonated beverages
- For children ensure adequate protein intake appropriate for age.

**MANAGEMENT OF HYPERTENSION (ICD-10-I11)**
- Initial therapy:
  - ACE inhibitors
  - Aldosterone antagonists
  - Beta blockers
  - Calcium channel blockers

**DIABETES TREATMENT (ICD-10-E19)**
- Monitor and manage diabetes
- Control blood pressure
- Control serum lipids
- Control body weight
- Control microvascular complications

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**KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES:**
- If life expectancy limited, multiple comorbidities personal preference
- Decision-making should be shared with patient/family

This STW has been prepared by national experts of both with capability considerations for various levels of healthcare system in the country. These guidelines are advisory, and are based on expert opinions and available evidence. There may be variations in the management of an individual patient based on individual circumstances. For further information, kindly visit our website on JAMA.org for more information.

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