

## Case Study, Chapter 53, Assessment of Kidney and Urinary Function

1. George Wright, 63 years of age, is admitted in same-day surgery for a renal angiogram for the diagnosis of renal artery stenosis. (Learning Objective 5)

- a. What patient education should the nurse provide to the patient?
  - Pre-op
    - i. The physician will come in to educate the patient and ask them questions pertaining their urologic symptoms (voiding frequency, etc.)
  - Intra-op
    - i. Patient may be asked to change position
    - ii. Patient may be asked to describe sensations
    - iii. Patient may be asked to cough or perform Valsalva maneuver
    - iv. Patient may have a catheter or two so that bladder pressure and bladder filling can be measured
    - v. Patient may have electrodes put on
    - vi. Patient's bladder will be filled through urethral catheter one or more times
  - Post-op
    - i. Patient may experience urinary frequency, urgency, or dysuria from the catheters
    - ii. Avoid caffeinated, carbonated, alcoholic drinks
    - iii. Might notice slight hematuria
    - iv. A warm sitz bath can be helpful for irritated meatus
    - v. Be alert to signs of UTI, contact your PCP
    - vi. Take ALL antibiotics prescribed pre-op and continue post-op
- b. What preparation should the nurse provide for the patient who is going for a renal angiogram?
  - A laxative may be given to clear colon so unobstructed x-ray can be taken
  - Injection sites may be shaved
  - Peripheral pulse sites marked for easy access during post-op

2. Laura is a new graduate nurse who has accepted a position on a medical ward that has a high percentage of patients with hypertension. In preparation for caring for these patients, Laura decides to review aspects of blood regulation, including the kidney's renin--angiotensin system. (Learning Objective 2)

- a. What does Laura learn in reviewing the role of the vasa recta in blood pressure regulation?
  - The vasa recta is like a baroreceptor. When there is a change in pressure, they stimulate the release of hormones that will get the blood pressure back to range. The vasa recta causes the release of the hormone renin.
- b. What is the physiologic reaction in the kidney to a decrease in blood pressure?
  - The kidney would excrete excess fluids.
- c. How does angiotensin II affect blood pressure?
  - Angiotensin II is the most potent vasoconstrictor, it increases blood pressure.
- d. How does the adrenal cortex function in conjunction with the kidney to increase blood pressure?
  - The adrenal cortex releases aldosterone in response to stimulation by the pituitary gland when there is poor perfusion or increasing serum osmolality, this increases blood pressure.