lab 10

Urine examination

1. Sample preparation
    1. Obtain fresh urine sample
    2. Centrifuge 10-15 ml at 1500 to 3000 rpm for 5 minutes
    3. Decant supernatant and resuspend remainder of urine
    4. Place 1 drop of urine on slide and apply cover slip
2. Examination
    1. Urine Cells
        1. Urine White Blood Cells
            1. Normal <2/hpf in men and <5/hpf in women
        2. Urine Red Blood Cells
            1. Normal <3/hpf
            2. Dysmorphic RBCs suggest glomerular disease
        3. Epithelial cells
            1. Transitional epithelial cells are normally present
            2. Squamous epithelial cells suggest contamination
            3. Renal tubule epithelial cells suggest renal disease

    Bacteria

        4. Five bacteria per hpf represents 100,000 CFU/ml
        5. Diagnostic for Urinary Tract Infection
            1. Men: Any bacteria
            2. Women: 5 or more bacteria per hpf

Urine Crystals

Types

    2. Calcium oxalate crystals (square envelope shape)
    3. Triple phosphate crystals (coffin lid shape)
        1. Associated with increased Urine pH (alkaline)
        2. Associated with Proteus Urinary Tract Infection
    4. Uric Acid crystals (diamond shape)
    5. Cystine crystals (hexagonal shape)
    6. urine casts