Urinalysis

Requirements for good laboratory practice and COLA Laboratory Accreditation programs are underlined.

SPECIMEN COLLECTION AND HANDLING

The proper collection and handling of a urine specimen is crucial for obtaining accurate results. Urine specimens which will not be tested within two hours need to be refrigerated to avoid bacterial overgrowth, since this can alter even dipstick results.

If a specimen is to be cultured and tested by dipstick or microscopic examination, be sure to do the culture first from the fresh, clean-catch specimen. The instructions for this collection should be given to the patient or posted in the bathroom for their convenience.

DIPSTICK URINALYSIS

- Store dipsticks according to manufacturer's recommendations. Always tightly recap the bottle upon withdrawing dipsticks to avoid light or moisture damage which may lead to inaccurate results. Place a date on the bottle when it is opened. Discard the opened bottle once the time limit for use has been reached (as indicated in the manufacturer's insert).

- For visual interpretation of dipsticks, you should run two levels of controls each day of use. For best results, performance of reagent strips should be confirmed by testing known normal and abnormal control materials. Check the manufacturer's recommendations for the type of controls to use. Some urine dipstick methods do not approve of the use of distilled water as a negative/normal control. Follow all manufacturer's recommendations for use of controls (type, number, and frequency). Be sure to record control results.

- Follow the manufacturer's instructions for quality control when using automated strip readers. Two levels of controls are required each day of use. You may be able to use distilled water as the negative/normal control - check the manufacturer's instructions for the instrument. Record the quality control results daily and be sure to perform and document required maintenance on the instrument.

- Follow manufacturer's instructions written on the package insert for test performance and any confirmatory procedures.

MICROSCOPIC EXAMINATION OF URINE

- Examine a well-mixed specimen while it is fresh or adequately-preserved.

- Spin 10 to 15 ml of specimen in a conical tube.The amount of time and centrifugal force should be established and written into your procedure. Consult the manufacturer of your centrifuge for recommendations.

- After the urine is centrifuged, pour off all but about 0.5 to 1.0 ml of urine. Gently re-suspend the sediment and perform the microscopic exam using a drop of this sediment under a coverslip.

- Observe approximately 20 fields under high (40x) power for cells, crystals, etc. Refer to your atlas for their proper identification. Report your results for each formed element as an average range from fields examined per high power field (hpf). These can be reported as 0-2/hpf, 2-5/hpf, 5-10/hpf, etc.

- Observe at least 10 fields under low (10x) power. Scan for casts, especialy around the edges of the coverslip. Have an atlas available to aid in identification of casts. Report your results as an average from fields examined per low power field (lpf).

- Be consistent in reporting semi-quantitiative results for such items as bacteria or mucus, where an actual number is not given. For these items, such terms as rare, few, moderate, many, or 1+, 2+, 3+, 4+ ,may be used. Your procedure manual should specify what terminology to use.

- Compare microscopic results with other urine findings, such as appearance, specific gravity, and dipstick results. If there is not a good correlation, recheck the specimen. However, there are instances when dipstick results may not correlate with what is found under the microscope. For example, the dipstick may read as 4+ blood, and there will be little or no RBCs found microscopically. This may be due to the specimen having a high pH or being relatively old. The RBCs disintegrate and release hemoglobin into the specimen; therefore, blood hemoglobin registers on the dipstick, but RBCs are not seen.