



Kingdom of Saudi Arabia  
National Guard Health Affairs  
King Abdulaziz Medical City

## DEPARTMENT OF PATHOLOGY & LABORATORY MEDICINE

# 1<sup>ST</sup> EDITION NEWSLETTER

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## DIVISION OF ANATOMIC PATHOLOGY

### ELECTRON MICROSCOPY UNIT

The Department of Pathology and Laboratory Medicine is pleased to announce the commissioning of its new Electron Microscopy Unit with the installation of its new electron microscope. This will improve the turn-around-time for renal biopsies and be of great value in the assessment of central and peripheral nervous system and muscle biopsies and various other surgical specimens. Additionally, it can be used for examination of bone marrow aspiration and cytological specimens. Physicians and scientists from all clinical specialties are encouraged to utilize the electron microscope. The average turn around time for an adequate specimen is 3-5 days.

For more inquiries about the EM, please contact Dr. Khaled Al Saad (pager 4237/ext 12724) or Mr. Saleem Baig (pager 4589/ext 11254).

### CYTOPATHOLOGY

Dr Hanaa Bamefleh has been appointed as the Director of Cytopathology in the Division of Anatomic Pathology replacing Dr Walid Khalbuss who left the Department in June 2007.

As with other disciplines in the Department of Pathology and Laboratory Medicine, Cytopathology has witnessed substantial growth in the last two years both in the volume and breadth of the diagnostic services provided at King Abdulaziz Medical City, Riyadh.

In addition to expanding and streamlining the Fine Needle Aspiration Biopsy service, and the implementation of comprehensive liquid-based technology in the Gynecological

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Pap-Test and Non-Gynecological services, another significant achievement has been the establishment of the formal School of Cytotechnology, under the auspices of King Saud bin Abdulaziz University for Health Sciences and the Post-Baccalaureate Certification Program (PBCP).

The PBCP has produced an overall resounding success; and graduating students will soon be ready for presentation by October 01, 2007. Requests for acceptance into this School have been steadily received, even from interested candidates as far away as Oman.

The School of Cytotechnology has also been reviewed by prominent professional certification organizations: notably, the International Academy of Cytology. With much enthusiasm we hereby announce the acceptance of the School by this Academy and the prospective certification examinations that will be conducted at King Abdulaziz Medical City, Riyadh, commencing on December 03, 2007. Our institution is now a recognized examination site for both Cytotechnology and Cytopathology Board examinations; only a handful of international institutions have achieved such a coveted distinction.

The future course envisioned for Cytopathology includes greater expansion in both scope and volume of the services provided. Liquid-based technology has revealed new diagnostic testing avenues that shall provide improved services to patients overall. Most notably, future implementation of Human Papilloma Virus DNA detection and classification will greatly assist us to better manage patients with precursor cervical pathology. Future bed-side sampling assessment shall also provide efficient and timely services to clinicians requesting FNA biopsy patient triage; and also, the anticipated introduction of a cervical cancer screening program shall greatly increase the volume of sampling for cervical cancer thus provide true 'screening' coverage.

We look forward to the future endeavors and to the challenges they may generate. We remain committed to providing utmost best Cytopathology diagnostic services for the patients and we always welcome your visitation.



## DIVISION OF CLINICAL CHEMISTRY:

### **NEW TESTS AVAILABLE:**

- + **B2M TEST**
- + **KAPPA AND LAMBDA**
- + **FPSA**
- + **B-NATRIURETIC PEPTIDE**

B2M

**Beta 2 Microglobulin (B2M)** is a low molecular weight protein that was first isolated from urine of patients with tubular renal diseases and workers exposed to cadmium. B2M is found on the surface of nearly all nucleated cells where it constitutes the light chain of class I human leukocyte antigens (HLA). As a result of degradation of HLA, B2M appears in its free form and can be found at low concentrations in serum, urine and other body fluids. Free B2M is eliminated from the body by glomerular filtration.

## Kappa and Lambda Light Chains Serum or Plasma

**Kappa and Lambda Light Chains Serum or Plasma** detects both bound and free light chains (kappa or lambda) in serum or plasma and it's based on an immunoturbidimetric reaction, which occurs between the anti- kappa light chains polyclonal antiserum and its corresponding antigen under optimal pH conditions and in the presence of polyethylene glycol. The turbidity of the immunocomplex is proportional to the concentration of the analyte in the sample.

## FPSA

**Free Prostatic Specific Antigen (FPSA)** can measure the blood level in addition to the total PSA. This will enable the laboratory to calculate the FPSA/TPSA ratio in case of a borderline total PSA level to enhance the diagnostic sensitivity of the assay.

The sample requirement is 2ml serum and the cut off for both free PSA and the ratio of FPSA/TPSA is <0.5ng/ml and >25 respectively in the disease-free population.

## B-NATRIURETIC PEPTIDE (BNP)

**B-Natriuretic Peptide** or BNP to aid in the diagnosis of heart failure is suspected patients can now be measured in the blood. This test will be available as a STAT or a routine test.

The sample requirement is 2ml of EDTA Plasma and the BNP cut-off for healthy population is <346pmol/L.



## DIVISION OF HEMATOLOGY

The division has discontinued two tests and added some new tests as follows:

Addition	Deletion
Reptilase	Bleeding time, any method
Ristocetin Cofactor	D-Dimer, qualitative, plasma
Hemosiderin, Urine	
D-Dimer, quantitative	
Parasite ID, Blood, other than malaria	
Nrbc count, automated	



## DIVISION OF MICROBIOLOGY

Dr Sameera Al Johani has been promoted to the position of Consultant Microbiologist effective 20<sup>th</sup> Aug 2007.

Dr Fayza Al Dugaishim has been promoted to the position of Associate Consultant effective 25<sup>th</sup> June 2007.

Congratulations to Dr Johani & Dr. Dugiashim for their new appointments.

Microbiology laboratory at KAMC offers enhanced testing for **CHLAMYDIA TRACHOMATIS & NIESSERIA GONORRHEA**. The incidence of sexually transmitted diseases (STD) is increasing worldwide and is mainly by *Chlamydia Trachomatis* and *Niesseria Gonorrehea*.

## CHLAMYDIA TRACHOMATIS & NIESSERIA GONORRHEA

**Chlamydia** is a common STD caused by the bacterium, *Chlamydia trachomatis*, which can damage a woman's reproductive organs. Even though symptoms of chlamydia are usually mild or absent, serious complications that cause irreversible damage, including infertility, can occur "silently" before a woman ever recognizes a problem. Chlamydia can also cause urethral discharge from an infected man.

**Gonorrhea** is caused by *Neisseria gonorrhoeae*, a bacterium that can grow and multiply easily in the warm, moist areas of the reproductive tract, including the cervix, uterus, and fallopian tubes in women and in the urethra in women and men. The bacterium can also grow in the mouth, throat, eyes and anus. Any sexually active person can be infected with gonorrhea. In the United States, the highest reported rates of infection are among sexually active teenagers, young adults and African Americans.

### LABORATORY TESTING:

On July 1, 2007, Microbiology section at KAMC started to implement high sensitivity nucleic acid amplification (NAA) dual testing for *Chlamydia Trachomatis* and *Niesseria Gonorrehea*, using the BD ProbeTec ET amplified DNA test.

This assay offers enhanced sensitivity and specificity (table 1) compared to the old method and may be applied to detection of the organisms in the urine as well as endocervical and urethral swabs. Positive and Negative predictive values may vary according to the prevalence of infected individuals in a given population. The use of urine specimens from male patients should improve acceptance of testing. Female endocervical swabs are preferred over urine specimens. However, in the event that internal exam is declined, the patient can still be assessed for Chlamydia & Gonorrhea using one urine specimen.

Since amplification tests may detect nonviable organism nucleic acid. "Test of Cure" specimens should be collected no sooner than 3 weeks after the treatment course is completed.

Table 1

Sample Type	Performance	
Sensitivity (%)	Specificity (%)	
Endocervical	93	98
Male Urethral	93	96
Female Urine	81	98
Male Urine	93	94

## SPECIMEN COLLECTION:

### Endocervical Swabs:

Excess mucus is removed from the cervical os with the supplied cleaning swab.

Discard this swab. The BD Culturette Direct Swab provided in the BD kit, is inserted into the cervical canal and is rotated for 15-30 seconds. The swab is then placed into the PINK transport tube. Store at 2°-27° until transported to the laboratory.

### Urethral Swabs:

The BD Mini-Tip Culturette Direct Swab is used to collect male urethral specimens. Insert the swab 2-4 cm in the urethra and rotate for 3-5 seconds. Immediately place the swab into the BLUE transport tube. Store at 2°-27° until transported to the laboratory.

### Urine Specimens:

Patients should not have urinated within one hour prior to providing urine samples. Urine specimens must be collected in a sterile preservative-free plastic collection container and refrigerated immediately. Patients should collect the first 15-20 ml of voided urine.

### Comment:

This test is NOT accepted as evidence in legal cases of sexual abuse and should only be ordered as an adjunct to culture.



## DIVISION OF TOXICOLOGY

- + New assay **Urine Copper** is available.
- + Assays for **Quantitative Liver Copper and Iron** are available.
- + Siham Al Zaid attended a symposium on Waters LC-MS in Manchester, UK, from 22–24 May 07.
- + Abdullah Al Ghamdi and Mona Sawaji attended an Agilent GC-MS training course in Kuala Lumpur, Malaysia from 4–8 June 07.

## DIVISION OF TRANSFUSION MEDICINE SERVICES

Ms. Sylvia Brow, MT(ASCP), SBB rejoined Transfusion Medicine Services in February 07 as a Senior Medical Technologist I after a hiatus of over two years. Sylvia's special interests include reference serology and serving as an ombudsman between TMS and outside hospital areas. TMS is proud that Sylvia chose to return and wishes her the best in the laboratory.

Ms. Edith Durante has been appointed as Transfusion Resource Nurse in TMS effective 27<sup>th</sup> Aug 2007. Ms. Edith has worked with the program for many years and comes to us from the QM Department.

## RESIDENCY TRAINING PROGRAM

Dr Hanaa Salem Bamefleh, Director of Residency Training Program has been appointed as the Chairperson of the newly established Saudi Board in Anatomic Pathology by the Saudi Council for Health Specialties in May 2007.

The Department is pleased to announce that the following pathology residents have proceeded abroad to start their training.



1. Dr Alaa Al Salem to Australia (Anatomic Pathology)
2. Dr Ali Al Othaim to France (Clinical Biochemistry)
3. Dr Areej Al Moghairy to Canada (Heamatology)
4. Dr Fadwa Al Adel to Canada (Anatomic Pathology)
5. Dr Khalid Al Batarfi to Australia (Hemapathology)
6. Dr Omar Al Khairy is preparing to depart to Australia for training in Immunopathology.

Three additional pre-scholar positions for residents have been announced in the INTERNET & INTRANET. Interested candidates should submit their applications though Postgraduate Section in the Academic Affairs Department.

These positions are for the following specialities:

Heamatopathology

Molecular pathology

Anatomic pathology

Applicants should be interviewed in August 2007 and the selected candidates will join in October 2007.

## GREETINGS TO THE NEW EMPLOYEES

- Professor Abdulmajeed Kambal, from King Saud University, joined the Division of Microbiology in July 2007 as Locum Consultant for 2 months
- Ms. Melinie Balmes, Phlebotomist joined in the ACC Lab on 7<sup>th</sup> July 2007
- Elenito Balmeo joined in Microbiology as a locum Medical Technologist in July 2007 for 6 months

## GOOD LUCK TO DR KHALBUSS

Dr. Walid Khalbuss, Director of Cytopathology & Consultant, Anatomic Pathologist/Cytopathologist left us in June 2007. Dr Khalbuss made a significant contribution to the Cytopathology service including starting the School of Cytotechnology.

## SYMPOSIUM

The Department of Pathology & Laboratory Medicine will hold a three day International Symposium & Workshops entitled '**Current Concepts and Issues in Pathology & Laboratory Medicine**' on 19-21 November 2007 at the Marriott Hotel, Riyadh. Lectures and workshops on many important topics among the disciplines of Anatomic and Clinical Pathology will be presented.

## WORKSHOP

The Dermatopathology Workshop has been conducted by KAMC from 19-23 July 2007 in Doha, Qatar at Hamad Medical Center. The course covered all major subjects in skin pathology. Similar workshop will be conducted in GCC countries before the end of 2007.

## SCHOLARSHIP ANNOUNCEMENT

The following scholarship disciplines are available for Saudi National as a part of the strategic scholarship five year plan of the Department of Pathology & Laboratory Medicine:

- ✚ Laboratory Management/Healthcare Administration
- ✚ Laboratory quality Management
- ✚ Education and Training
- ✚ Laboratory Information System
- ✚ Bone Marrow Processing/Stem

The selection of the candidate will be done on a competitive basis through a committee formed in coordination with our department.

## EDUCATION

The Department of Pathology and Laboratory Medicine actively participates in the Saudi Career Development Program (SCDP). During the year 2007, ten (**10**) SCDP participants were trained in different sections of the Department.

As a training institution, the Department of Pathology and Laboratory Medicine is very much involved in training graduate students from Colleges. Eighteen (**18**) trainees are rotated in the various disciplines of the laboratory on an average of 48-week training period.

The Department encourages its staff to attend continuing education activities outside the hospital. It also recommends in sending staff to pursue higher education (i.e. Master Degree) to different teaching institutions within or outside the Kingdom.

