

screening services into both medical and public health services and have achieved reasonably high coverage rates, effectively reducing incidence and mortality over the past seven decades<sup>(5)</sup>.

The expanding use of effective prophylactic vaccines for preventing infection with human papillomavirus (HPV) types 16 and 18, common etiologic agents for cervical cancer, offers even greater promise for eventual elimination of cervical cancer as a major public health problem<sup>(6)</sup>.

The 20<sup>th</sup> century witnessed a remarkable decline in the mortality from cervical cancer in many developed countries; this achievement is directly attributable to the implementation of the Papanicolaou's (Pap) test<sup>(7)</sup>. In the 1930s, before Pap screening was introduced, cervical cancer was the most common cause of cancer deaths in women in the United States. Today, it is not even one of the top ten<sup>(8)</sup>. The Pap smear is a cytologic screening test used to detect cervical intraepithelial neoplasia (CIN) and early cervical cancer so that these conditions can be managed or treated to prevent disease progression to invasive cancer. Cervical cytology results are not diagnostic of CIN or cancer, as biopsy and histologic confirmation are required for diagnosis<sup>(9)</sup>.

Terminology forms the basis for effective communication between the laboratory and clinician. The use of a uniform diagnostic terminology facilitates communication by establishing a common language that, in theory, does not vary significantly from cytologist to cytologist or laboratory to laboratory<sup>(10)</sup>.

The Bethesda System 2001 and its 1991 and 2001 revision aim to simplify Pap smear reporting and make it more reproducible. It redefines the Pap smear request as a medical consultation<sup>(11)</sup>.

The objective of this study is to evaluate 2001 Bethesda System of cervicovaginal smear classification in the diagnosis of different pathologies seen in women having different gynecological complaints.

## Methods

The study is a prospective one. Cervicovaginal smears were obtained from 360 female patients with different gynecological complaints (aged 15-72 years) all were married and non pregnant attending Gynecological Consultant Clinic in Al-Imamian Al-Kadhimiyan Medical City, Baghdad, Iraq for the period from November 2011 to April 2012. In this study cervicovaginal smears were evaluated and assessed using the Bethesda System (TBS) 2001 with special emphasis on premalignant lesions, with exclusion of cases which were unsatisfactory for evaluation. Patients were categorized according to the Bethesda System into:

- Cases of atypical squamous cells (ASC) including: atypical squamous cells of undetermined significance (ASC-US), atypical squamous cells cannot exclude HSIL (ASC-H)
- Cases of low-grade squamous intraepithelial lesion (LSIL)
- Cases of high-grade squamous intraepithelial lesion (HSIL)
- Cases of atypical glandular cells (AGC)

**Pap smear technique:** Two cervicovaginal smears were prepared for each patient, after fixation with 95% ethyl alcohol, slides stained by Pap stain<sup>(4,10)</sup>.

### Papanicolaou stain (progressive method):

1. **Rehydration:** put the fixed smear in 80% then 70% then 50% ethyl alcohol and then in tap water for each rinse 10 dips.
2. **Nuclear stain:** Harris Hematoxylin, put the smear in this dye for 45sec. to 1 minute.
3. **Rinse:** rinse the smear in 2 water rinses for each rinse 10 dips.
4. **Dehydration:** put the smear in 50%, 70%, 80% and 95% ethyl alcohol and for each rinse 10 dips.
5. **Cytoplasmic stain:** put the smear in Orange G-6 for 1¼ minute.
6. **Rinse:** rinse the smear in 3 rinses 95% ethyl alcohol and for each rinse 10 dips.
7. **Cytoplasmic stain:** Eosin Azur- 65 (EA65) for 3 minutes.
8. **Rinse:** rinse the smear in 3 rinses 95% ethyl alcohol and for each rinse 10 dips.