module2

BASIC KNOWLEDGE FOR CERVICAL CANCER SCREENING USING VIA, VILI AND HPV TEST

Comprehensive Visual Inspection of the Cervix with Acetic Acid (VIA) and Lugol's Iodine (VILI) http://www.gfmer.ch/vic/

PETIGNAT Patrick, MD HUG / NEGULESCU Raluca, MD HUG / ALEC Milena

Design: PERROUD Joanie





Recognizing and **locating** the abnormal area on cervical exam.

Recognizing the characteristics of VIA and VILI of normal cervix and **benign** cervical lesions.

Recognizing the characteristics of VIA and VILI of cervical intraepithelial **neoplasia** *(CIN)* and cervical cancer.

How does VIA work ?

The application of *(3-5%)* acetic acid causes reversible **protein coagulation** in tissues with **high DNA concentration**, which becomes white *(acetowhite)*.

The acetowhite epithelum obscures the pink color of the underlying stroma.

The **physiological** conditions having high nuclear activity and which may become transiently white are *(1)* immature metaplasia and *(2)* columnar epithelium.

What is a VIA-positive lesion ?

An acetowhite area may be a benign lesion, a precancerous lesion or a cancer. Only precancerous lesions or cancer are considered pathological and need therapy.

Before considering a "VIA-positive lesion" as precancerous or cancer, you need to do the 3 following steps:

- 1. Identify the anatomy of the cervix.
- 2. Localize the abnormal area (in contact vs not in contact with the transformation zone).
- 3. Exclude a benign lesion.

STEP 1 – DEFINE THE ANATOMY OF THE CERVIX

Because CIN occurs in the transformation zone *(TZ)*, this area should be clearly identified. The TZ corresponds to the area between the original and new squamocolumnar junction *(SCJ)*.



*The presence of glandular orifice may sign the old SCJ.

STEP 2 – LOCALIZE ACETOWHITE AREA

Observe the acetowhite area in contact with the squamocolumnar junction (SCJ).



STEP 3 – EXCLUDE BENIGN ACETOWHITE AREA

Acetowhite area "line-like" appearing near the endocervix at the lower edge of the SCJ = immature metaplasia.



STEP 3 – EXCLUDE BENIGN ACETOWHITE AREA

Acetowhite area "dot-like" located in the endocervix = columnar epithelium with metaplasia.



STEP 3 – EXCLUDE BENIGN ACETOWHITE AREA

Acetowhite area corresponding to nabothian cyst or cervical polyp.





How does VILI work ?

Lugol's iodine is a glycophilic iodine solution that will stain tissues with **high glycogen** concentration dark **brown**.

The mature cervico-vaginal squamous epithelium will appear dark brown and the normal columnar epithelium will not change its pinkish colour, as it contains no glycogen.

Tissues having **low glycogen** concentration *(precancerous lesions)* will appear **yellow**.

The physiological conditions which are glycogen poor and therefore remain iodonegative are:
(1) columnar epithelium (pinkinsh)
(2) postmenopausal/hypo-estrogenic states (yellow)

What is a VILI-positive lesion ?

A VILI positive area may indicate a benign lesion, a precancerous lesion or cancer. Only precancerous lesions or cancer are considered pathological and require treatment.

Before considering a "VILI-positive lesion" to be a precancerous lesion or cancer, you need to do the 3 following steps:

- 1. Identify the anatomy of the cervix.
- 2. Localize the abnormal area (in contact vs not in contact with the SCJ).
- 3. Exclude a benign lesion.

STEP 1 – DEFINE THE ANATOMY OF THE CERVIX

Because cervical neoplasia originates in the transformation zone *(TZ)*, this area should be clearly identified. This area corresponds to the area between the original and new squamocolumnar junction.



STEP 2 – LOCALIZE LUGOL NEGATIVE AREA

Observe the cervix after Lugol's iodine application: *(a)* is normal, and *(b)* corresponds to Lugol negative area. This finding has pathological significance.



STEP 3 – EXCLUDE BENIGN LUGOL'S IODINE NEGATIVE AREA

Lugol's iodine negative cervix corresponding to normal menopausal status. *(Low estrogen is responsible for the Lugol negative area.)*



Conclusions

A VIA and/or VILI "positive" area may be benign and should be recognized.

VIA and/or VILI **suspicious lesions** are located in the immediate vicinity or in direct contact with the **TZ**.