Cytology test reading – quality control

Croatia and the EU: Together Against Cancer

IMPROVEMENT OF QUALITY OF THE NATIONAL CANCER SCREENING PROGRAMMES IMPLEMENTATION (CRO SCREENING)

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Quality control

- QC in cytopathology is complex because of all the factors that can influence the diagnostic result.

- Scanning of cervical slides for the identification of preinvasive disease of the uterine cervix is among the most difficult of diagnostic tasks as it requires the continual undivided attention of the screener.
- In the laboratory should be a system to prevent and control errors that can occur from the time the cytological examination is requested to its examination and interpretation.

Quality control

- It is also mandatory to systematically monitor the quality of all laboratory procedures and set standards for all of the health professionals involved.

- Internal quality procedures should be a priority, and an external audit on the QC and QA measures of the laboratory is also required.

Quality Control and Quality Assurance in cytology

- QA focuses on outcome and involves a global assessment of the process which leads to the outcome.

- In cytology, the outcome is equated with the care of patients, including all the planned and systematic activities implemented, in order to provide adequate confidence that an entity will fulfil requirements for quality.

Monitoring the outcome of women recommended for referral

- Laboratories are responsible for ascertaining the outcome for all women they refer, including those women who refuse treatment or default from appointments.

- This may be achieved by correlating histology and colposcopy results, by communicating with GPs, local screening coordinators, and programme commissioners, and by sending failsafe reminder letters to GPs and sample-takers.


GOALS
SUCCESS
TEAMWORK
VISION
SKILLS

- What affects the test result in cytology laboratory?

What affects the test result in cytology laboratory?

Human errors, that are related to:

- Lack of posture training - training personnel is fundamental to maintain high-quality skills and experienced and preferentially certified professionals in continuous education programmes.
  - **Training is a critical step for quality in cytology.**
- Problems of muscular discomfort of the screener.
- Unsatisfactory equipment.
- Furniture and working environment.

CYTOLOGY WORKING CONDITIONS
Equipment

- 1. *Microscopes*
- In the cytopathology laboratory, quality is directly linked to the microscope.
- Microscope problems related to discomfort and poor concentration of screener, the main problems is the height and angle of the eyepiece and the location of the adjustment/focusing controls.
- 2. *Computing equipment*
- The space available on the desk to use the mouse and keyboard.

CYTOLOGY WORKING CONDITIONS
Furniture

- *Chairs*
- The main problems are the ability to rest their feet flat on the floor, chair height, inadequate backrest support and the adjustability of the chair.

- *Benches*
- Inadequate space on the bench surface, the ability to rest their feet on the floor and their arms on the bench, bench height, the sharpness of the bench edge and the ability to move the chair around the bench.

CYTOLOGY WORKING CONDITIONS

Working environment

- Environmental problems (room temperature) related to poor concentration, discomfort and tired eyes.

CYTOLOGY WORKING CONDITIONS

- Concentration, eye strain and physical discomfort problems could be directly linked to equipment and furniture design.
- Breaks away from an activity, may be required to rest from concentration and to relax and stretch muscles which may have accumulated tension or to relieve eye fatigue.
- Breaks can be in three forms: first, a complete rest from work; second, a change in the work task; and third, a ‘microbreak’, which involves small changes of posture, such as stretching, glancing away from the microscope and very short periods of rest.

What affects the test result in cytology laboratory?

- Problems attributable to sample quality, and difficulties in development of diagnostic criteria.
- Sample preparation is critical to allow the optimal performance of cytoscreeners and to avoid reading errors.
- Registry-based audit should be carried out for any screening technologies that are implemented in the programme.

RESULT — INADEQUATE

- Sample consisting largely of blood, neutrophils or polymorphs with few squamous cells.

- Sample showing marked cytolysis where few intact squamous cells remain.

- Samples lacking endocervical cells in follow up of treated endocervical dyskaryosis or lacking transformation zone material in follow up of treated squamous dyskaryosis.

- Box 20 (cervix fully visualised) not ticked**.**

RESULT — INADEQUATE

- The inadequate rates for cervical samples should be audited on a regular basis. This audit should include total of samples taken by practice and by individual sample takers.

- Overall inadequate rate for practice (number and percentage) inadequate rate for individual sample taker (number of cases and percentage).

- Breakdown of reasons for sample inadequacy.

- A breakdown of this information will normally be provided by local laboratory.

RESULT — INADEQUATE

- Women should be referred for colposcopy after three consecutive inadequate samples.
- At least 90% of women should be seen in a colposcopy clinic within eight weeks of referral.
- Cytology should not be repeated at an interval of less than three months.
- A shorter interval does not allow time for the cervical epithelium to heal, or for small dysplastic lesions to recur between tests, and this decreases the sensitivity of screening.

RESULT — BORDERLINE ABNORMALITY

- These are nuclear changes that cannot be described as normal, but in which there is doubt as to whether or not the nuclear changes reflect true dyskaryosis.

- Borderline nuclear change is often reported in the presence of HPV changes.

RESULT — BORDERLINE ABNORMALITY

- Repeat sample within six months. The majority of samples will revert to normal by this stage.

- If there is an associated treatable condition, treat and repeat, screen at no more than six months.

- If changes persist (three borderline results) **refer to colposcopy.**

- Three consecutive negative results, each at least six months apart, are required before returning to routine recall.

RESULT — BORDERLINE ABNORMALITY

- **Refer immediately to colposcopy if borderline nuclear changes are present in endocervical cells or if** report of borderline high grade cannot be excluded.

- If in a 10 year period there are three non consecutive abnormal results (usually a combination of borderline or mild dyskaryosis), **refer to colposcopy.**

RESULT — MILD DYSKARYOSIS

- These are nuclear abnormalities reflecting probable CIN1 (ie low grade CIN). Mild dyskaryosis is often associated with HPV.

- In the majority of women changes relating to mild dyskaryosis will regress spontaneously.

RESULT — MILD DYSKARYOSIS

- **Refer to colposcopy or repeat sample in 6 months, depending on local service protocol.** Many will have returned to normal by this stage.
- Three consecutive negative results, each at least six months apart, are required before returning to routine recall.
- If a single mild dyskaryosis result is obtained after treatment for CIN 2 or worse**, refer to colposcopy.**
- Women treated for CIN 1 can be returned to routine recall after 2 years (follow-up cytology at six, 12 and 24 months) of negative post biopsy cytology.
- If in a 10 year period, there are three borderline or mildly dyskaryotic results, **refer to colposcopy.**

RESULT — MODERATE DYSKARYOSIS

- Nuclear abnormalities reflecting probable CIN 2.
- **Refer to colposcopy.**
- Women should have annual follow up for at least 10 years (cytology at six and 12 months and then annually for nine years) after treatment for CIN 2 or worse, before returning to routine recall.

RESULT — SEVERE DYSKARYOSIS

- Nuclear abnormalities reflecting probable CIN 3.
- **Refer to colposcopy.**
- Women should have annual follow up for at least 10 years (cytology at six and 12 months and then annually for nine years) after treatment for CIN 2 or worse, before returning to routine recall.

RESULT — SEVERE DYSKARYOSIS/?INVASIVE CARCINOMA

- Cellular abnormalities indicating at least CIN 3, with additional features suggesting possibility of invasive cancer.

- **Urgent 2 week referral to colposcopy.**

RESULT — GLANDULAR NEOPLASIA?

- Cells of this type may represent cervical glandular intraepithelial neoplasia (cGIN), **or adenocarcinoma of the cervix, or** adenocarcinoma of the endometrium, **or extra-uterine adenocarcinomas.**

- **Urgent 2 week referral to gynaecological oncologist/ colposcopy**