Buckinghamshire Healthcare NHS
NHS Trust

UPDATE ON NHS CERVICAL SCREENING PROGRAMME & CERVICAL PATHOLOGY

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Outline of this presentation

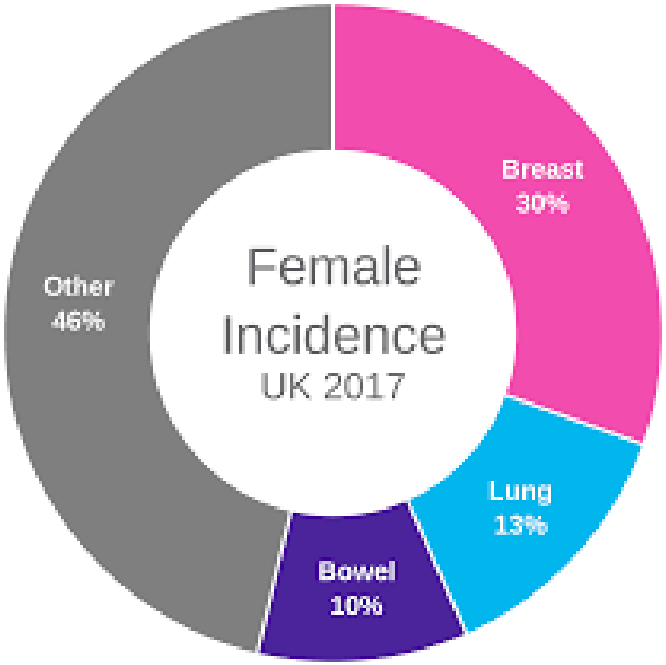
- Highlight why cervical screening is important
- Recent changes in NHSCSP and rationale behind it
- HPV vaccines and prevention of cervical cancer
- Diagnostic updates

1. use of IHC in current practice (including p16, Ki67)
2. CGIN
3. SMILE
4. changes in FIGO staging

Why cervical screening is important

- To prevent women from dying of cervical cancer
- To detect pre cancerous lesions and prevent cancer
- To detect HPV infection in the cervix and follow up these patients
- Easy 10 minute test, non invasive procedure, freely and readily available in the UK
- At least 5000 cases of cervical cancers are prevented every year in the UK due to screening

Cervical cancer is the 4th most common cancer in females in the UK



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Cervical cancer facts

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Who is at risk of developing cervical cancer

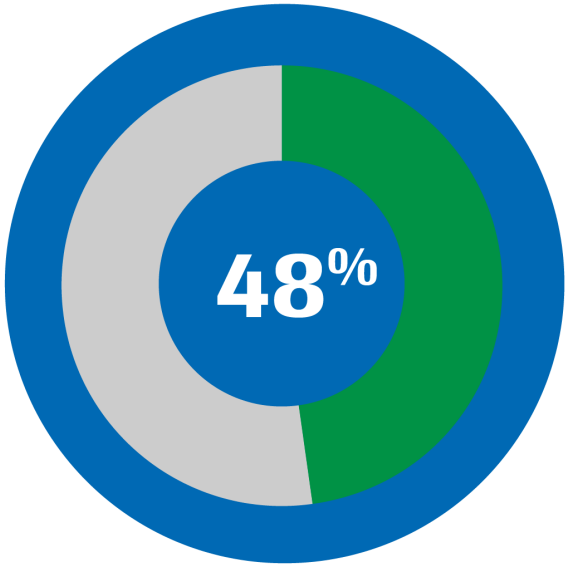
You're still at risk of cervical cancer if:

- you have had the HPV vaccine – it does not protect you from all types of HPV, so you're still at risk of cervical cancer
- you have only had 1 sexual partner – you can get HPV the first time you're sexually active
- you have had the same partner, or not had sex, for a long time – you can have HPV for a long time without knowing it
- you're a lesbian or bisexual – you're at risk if you have had any sexual contact
- you're a trans man with a cervix
- you have had a partial hysterectomy that did not remove all of your cervix

Survey done by Roche Diagnostics in the UK

48% of woman think

they're not at risk of cervical cancer
if they're in a long term relationship



It's a myth!

Don't take the risk. Get the facts about cervical cancer

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NHSCSP current testing age and intervals

Chart showing age range and when you'll be invited for screening

Age	When you're invited
under 25	up to 6 months before you turn 25
25 to 49	every 3 years
50 to 64	every 5 years
65 or older	only if 1 of your last 3 tests was abnormal

Era before Primary HPV Testing

- Until November 2019 all women who had smears were screened by screeners. If a low grade abnormality was detected then the sample was sent for HPV testing. If high risk HPV was positive with low grade abnormality then referred to colposcopy

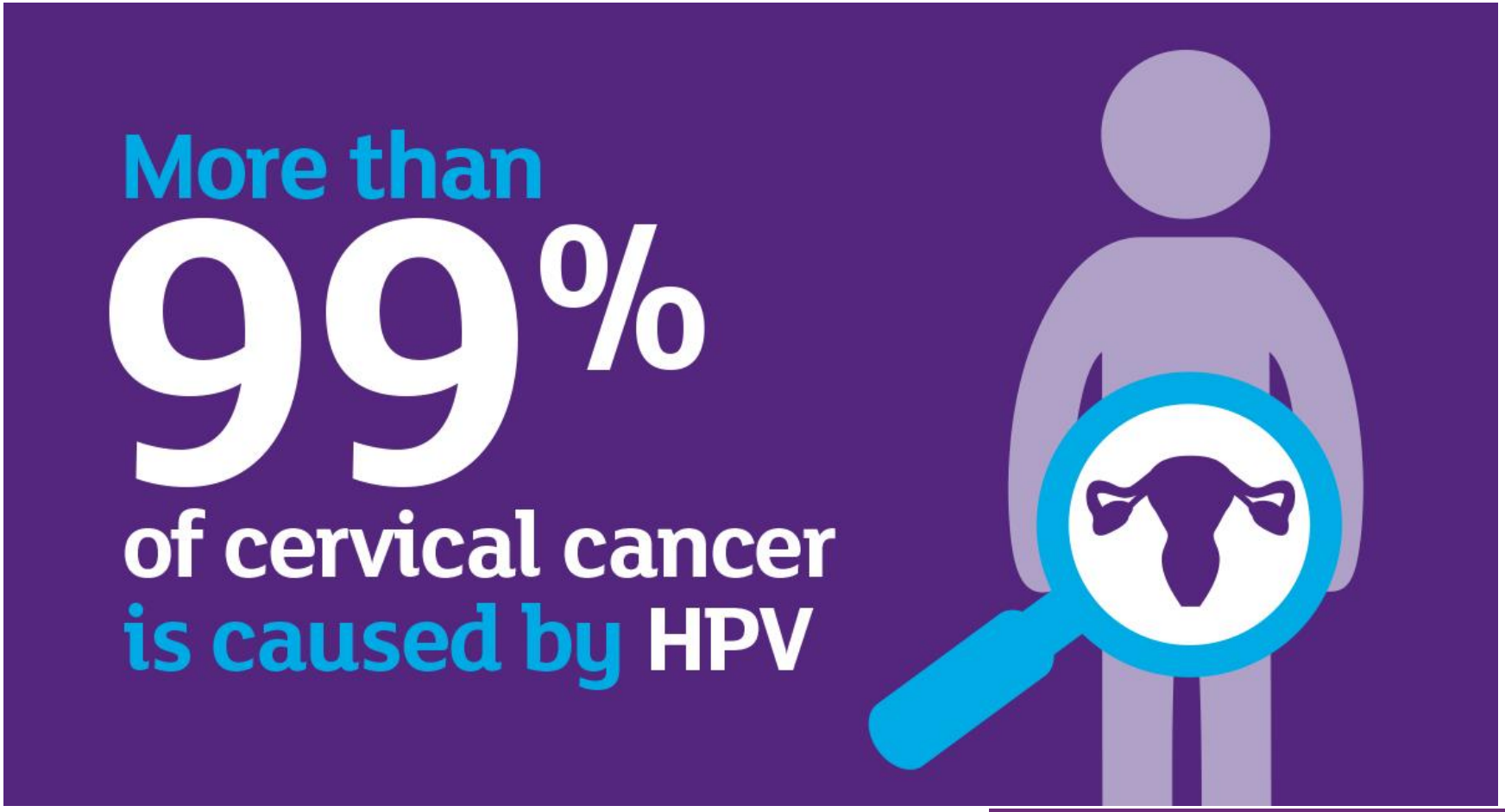
- If the sample was HPV negative with a low grade abnormality repeat testing is done according to protocols. Some cases need discussion at the Colposcopy MDT meeting to have a follow up plan

- If a high grade abnormality was detected on screening then referred to colposcopy straightaway

- If an abnormality was found on colposcopy then a biopsy is taken

- Depending on the biopsy result either DLE or follow up is planned

Why change to Primary HPV testing



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HPV FACTS

- Most men and women — about **80 percent** of sexually active people — are infected with HPV at some point in their lives, but most people never know they have the virus
- Around the world, 466,000 women are reported to develop cervical cancer each year, and 225,000 die from the disease. Eighty to eighty-five percent of these deaths occur to women in developing countries. **Most** of these deaths occur in Sub-Saharan Africa, South Asia and Latin America.
- **HPV** is the most common STD
- Although HPV is the most common sexually transmitted infection, HPV-related cancers are not common in men.
- Certain men are more likely to develop HPV-related cancers:
- Men with weak immune systems (including those with HIV) who get infected with HPV are more likely to develop HPV-related health problems.
- Men who receive anal sex are more likely to get anal HPV and develop anal cancer

Transmission of the HPV

How human papillomavirus (HPV) is spread

- Many types of HPV affect the mouth, throat or genital area. They're easy to catch.
- You do not need to have penetrative sex.
- You can get HPV from:

➢ any skin-to-skin contact of the genital area

➢ vaginal, anal or oral sex

➢ sharing sex toys

HPV has no symptoms, so you may not know if you have it!

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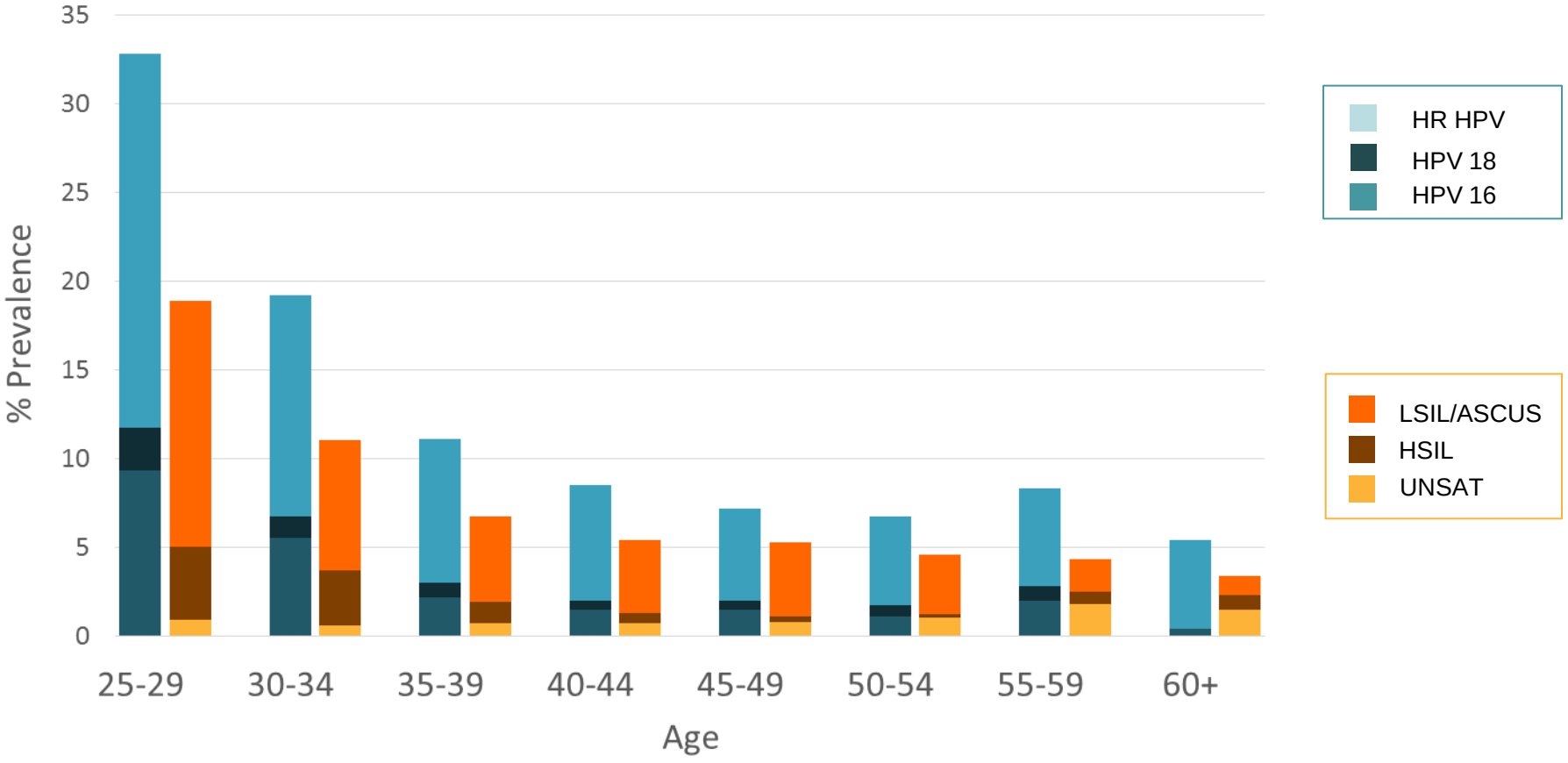
HPV Prevalence and Incidence

- Although the global HPV prevalence was estimated to be approximately 12%, higher prevalences were noted in sub-Saharan Africa (24%), eastern Europe (21.4%), and Latin America (16.1%).

- In many developing nations, cervical cancer is the leading cause of cancer mortality among women. Worldwide, it is the second most common cause of cancer mortality among women.

- A cytologic screening of the cervix in more than 400,000 women supported a higher incidence of HPV in young women. This study found that the rate of HPV infection in women younger than 30 years is double that in women older than 30 years

HPV and cytology in relation to age [n=9,596]



HPV & Cervical Cancer

- HPV is now recognized as an aetiological agent for multiple anal-genital, head and neck, and possibly skin cancers
- Cervical cancer is the fourth most common cancer in women worldwide
- There is compelling evidence that HPV infections clear in 90% of infected women, regardless of the presence or absence of abnormal cytology
- Cervical cancer prevention is directed at preventing HR-HPV infection by type-specific vaccines and/or identification and removal of cervical precancerous lesions

High Risk and Low Risk types of HPV

- There are more than 100 types of HPV
- Some are high risk and the others are low risk for cancer
- **Fourteen high-risk HPV types** (**HPV**-16, -18, -31, -33, -35, -39, -45, -51, -52, -56, -58, -59, -66, and -68)
- Some HRHPV types are tested by current machines
- HPV16, HPV18 or other high risk types responsible for about 70% of all cervical cancers
- Low risk HPV types (HPV6, HPV11)
- Not tested by machines as they can't cause cervical cancer and also the diseases they cause are treatable (eg;Genital warts)

Why primary HPV testing

- As of July 2019, the Netherlands and Turkey are the only European **countries** with fully implemented national **HPV**-based cervical cancer **screening**. Italy, Sweden and Finland have already implemented **HPV**-based **screening** in several regions, and several other **countries** are at various stages of implementation.17 Sep 2019

- The highest estimated incidence rates are in **sub-Saharan Africa**, Melanesia, Latin **America** and the Caribbean, south-central Asia and south-east Asia. In the most developed countries, the primary economic burden of HPV disease is related to the early detection and management of precancerous lesions

Why Primary HPV Testing

Infection with a high-risk strain of the human papillomavirus has been established as a necessary but insufficient cause of cervical cancer.

This has led in recent years to the inclusion of HRHPV testing as an adjunct to cytology in organised cervical screening programmes.

In the English programme HRHPV testing has been used since 2011 to help manage women with low grade cytology abnormalities and as a follow up test of cure in women who have received treatment.

Why primary HPV testing

Four large European randomised controlled trials have considered the use of HRHPV testing as a primary screening test.

Compared to cytology, HRHPV testing has been shown to reduce the risk of developing cervical cancer through increased sensitivity for underlying disease.

As natural history work suggests that at least 10 years elapses between acquiring HRHPV and developing cancer, the high negative predictive value of HRHPV testing and lower false negative rate means screening intervals can be lengthened in women who test negative for HRHPV.

In addition, detailed modelling studies based on the ARTISTIC trial have since shown primary HRHPV screening to be cost effective.

Primary HPV testing in the UK

- In the next 25 years, the epidemiology of cervical cancer in England, UK, will change.
- Additionally, the proportion of women screened regularly is decreasing and women who received the HPV vaccine are due to attend screening for the first time.
- In England, UK, women vaccinated against human papillomavirus (HPV) in 2008 at age 17 years have been invited to screening for the first time in 2016–17.
- With primary HPV testing not only will cohorts of women entering the screening programme have a lower risk of cervical cancer, but the sensitivity of the screening test to precancer will be increased

Why change to primary HPV testing? Summary

- Test is more sensitive than cytology
- More high grade abnormalities will be detected than cytology and will save more lives
- HR-HPV has a lower false negative rate compared to cytology
- Younger women vaccinated with HPV vaccine are now entering the screening age and primary HPV test is more appropriate for them because the incidence will be lower
- If the test is negative very unlikely to develop cancer within next 5 years.

Why change to primary HPV testing?

- PHE has stated that the screening programme needs to change in order to:

1- allow large capacity labs to be created

2- lower the cost per test

3- allow longer intervals between tests

4- address the national shortage of cytology staff

5- improve abnormal detection rates

Roche Cobas® 4800 HPV

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Current Practice in the UK

- Changing to Primary HPV Testing required major service reconfiguration
- As all women will be first tested for HPV and only the HRHPV positive cases will be screened (less than 15%) compared to the 100% smears screened previously now we need considerably less staff for screening
- 8 labs selected through a bidding process and services were moved to these labs.
- Geographical areas were defined for these labs and samples needed to be transported to these labs

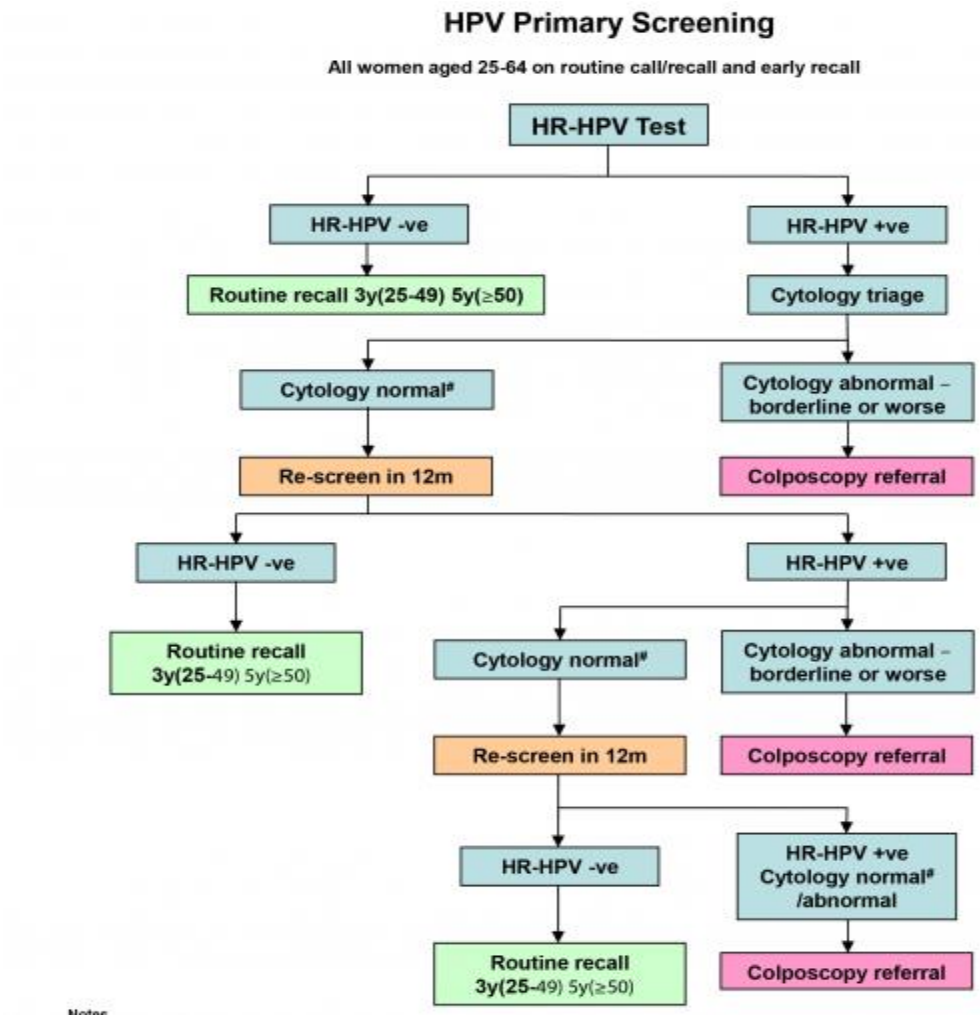
Service redesign requirements

- Efficient transportation from the point of collection to the testing lab
- Developing IT links between hospitals
- Buying larger machines for HPV testing with larger capacity
- Training staff for the new programme requirements
- Funding by PHE
- Make sure quality is maintained and uninterrupted service is provided to women during transition period

Current practice in the UK

- All samples are tested for HPV first
- Only positive samples are screened by screeners.
- Abnormal smears with borderline/low grade or high grade abnormalities are referred to colposcopy
- Normal cytology with HRHPV positive cases and Test of Cure cases are also referred
- In colposcopy any abnormalities will be biopsied
- Cervical biopsies with high grade abnormalities usually will have DLEs.
- Cancers will have hysterectomies or re excisions and further treatment depending on the stage
- All non correlation cases will be discussed at the monthly Colposcopy MDTM to plan further management

Primary HPV testing Pathway



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HPV Vaccines

Depending on the types of HPV the different vaccines protect against vary:

- The HPV bivalent vaccine (Cervarix) will only protect against HPV 16 and 18.
- The HPV quadrivalent vaccine (Gardasil) will protect against HPV types 6, 11, 16, and 18.
- The HPV 9-valent vaccine, recombinant (Gardasil 9) can prevent HPV types 6, 11, 16, 18, 31, 33, 45, 52, and 58
- Two-dose Gardasil nine vaccination (ie, the nine-valent vaccine), protects against HPV types that cause about 90% of cervical cancers compared with the bivalent and quadrivalent vaccines that protect against about 70% of cervical cancers.

Cervical cancer can be prevented!

- As a public health policy, HPV immunisation will deliver the biggest reduction in cervical cancer diagnosed.
- Provided vaccine uptake is maintained, and even without the introduction of the nine-valent vaccination, cervical cancer rates in women aged 25–34 years will decrease by more than 50%.
- Introduction of the nine-valent vaccine from 2019 would decrease cancer rates by a further 36% in women aged 25–29 years and 28% in those aged 30–34 years by 2036–40.
- However, in the next 25 years, the vaccination strategy will have no direct effect on women born before 1991 who were not vaccinated before HPV exposure.
- In the short term, the timeliness of the introduction of HPV primary screening into the screening programme will be the most important determinant of the potential reduction in the number of cervical cancers diagnosed among unvaccinated women.

Update on cervical Pathology

- CIN 1,2,3 and invasive SCC
- CGIN and invasive adenocarcinoma
- SMILE and invasion
- Use of IHC in cervical pathology
- FIGO reporting updates

NHS CSP

Public Health England

Guidance

Cervical Screening Programme: histopathology reporting handbook

Updated 15 November 2019

Contents

Cervical screening: histopathology guidance for the NHS cervical screening programme

1. Introduction

This document replaces the second edition of 'Histopathology reporting in cervical screening: an integrated approach' (2012).

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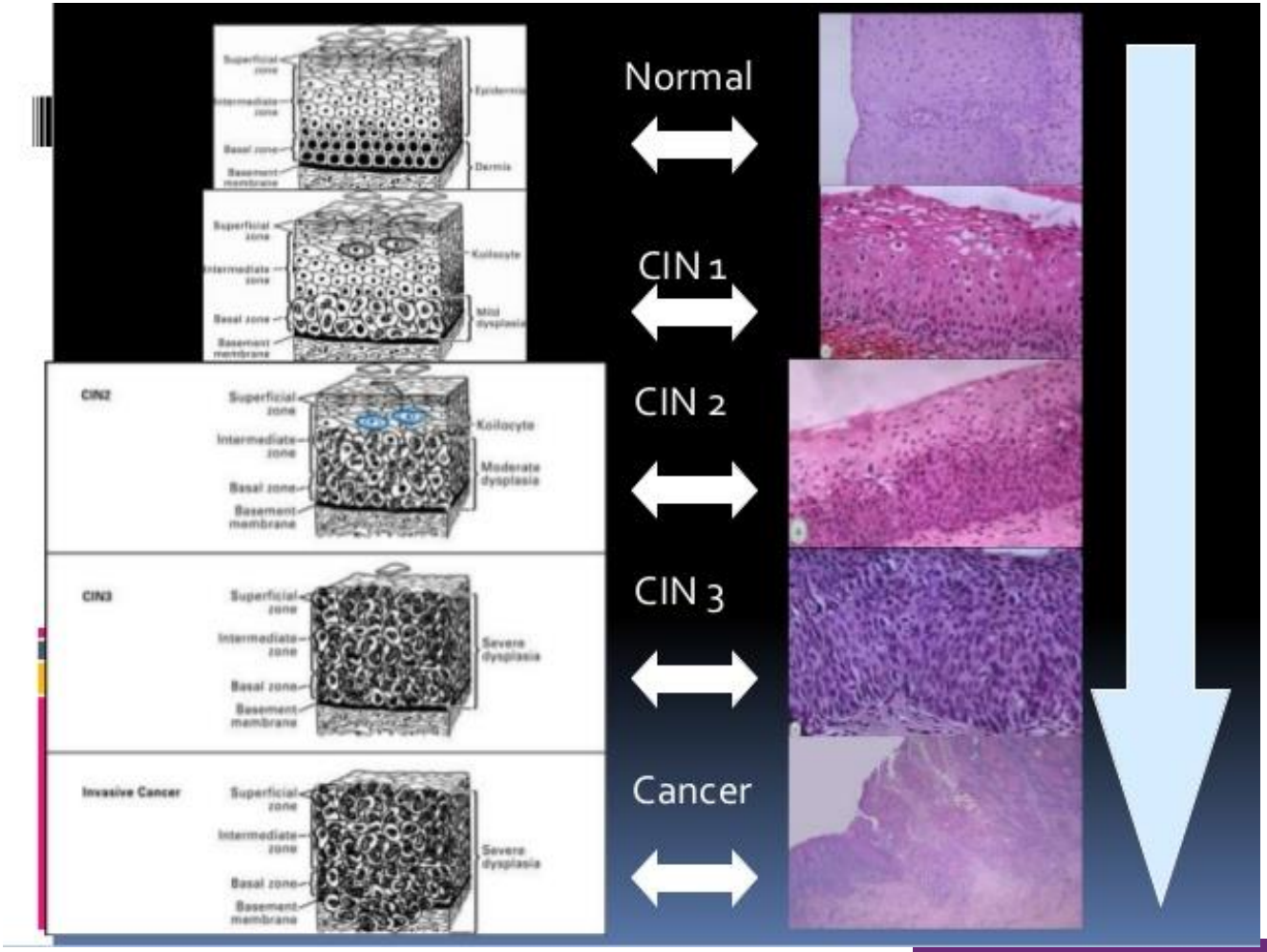
CIN 1,2,3

Cervical Screening Programme: Histopathology reporting handbook

- Updated 15 November 2019
- Two tier system – low and high grade abnormalities
- Low grade – CIN1
- High grade – CIN2 & CIN3

CIN 1,2,3 and SCC



BAGP recommendations on using p16

THE BRITISH ASSOCIATION OF GYNAECOLOGICAL PATHOLOGISTS

Interpretation of p16 Immunohistochemistry In Lower Anogenital Tract Neoplasia

Authors: Naveena Singh[1], C Blake Gilks[2], Richard Wing-Cheuk Wong[3], W Glenn McCluggage[4], C Simon Herrington[5]

[1]Barts Health NHS Trust, London, UK; [2]Vancouver General Hospital [3]Pamela Youde Nethersole Eastern Hospital, Hong Kong, [4]Belfast Health and Social Care Trust, Belfast, UK; [5]University of Edinburgh

Background

$p16^{INK4A}$

- $p16^{INK4A}$ (henceforth referred to as p16) immunohistochemistry (IHC) is a good surrogate test for the presence of a potentially transforming human papillomavirus (HPV) infection in anogenital carcinomas and premalignant lesions[1].
- p16 is a 16 kDa protein encoded by *CDKN2A*, within the INK4/ARF tumour suppressor locus on Chromosome 9 (9p21.3)[2,3].
- Its major function in the cell is to inhibit cyclin-dependent kinases (CDK4 and CDK6) that are required to phosphorylate the retinoblastoma protein, pRb. In this way it inhibits traversal of the G1/S checkpoint, resulting in blockade of the cell cycle.
- It is therefore a marker of cellular senescence, or expressed in response to aging or other stressors, to curb inappropriate cell division.
- Its role in cancer is complex; as a tumour suppressor its function is deranged in a large variety of cancers, and it is a commonly mutated gene in cancer, both at the outset and during progression.

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P16

- Based on the concept that HPV-mediated transformation is triggered by dysregulated expression of the viral oncogenes E6 and E7 in basal and parabasal cells, p16 immunohistochemistry was hypothesized to distinguish between transforming and nontransforming HPV infections.

- Only the block positive p16 expression pattern was defined as a hallmark of HPV-dependent transformation and thus considered as p16 positive.

Use of P16 in diagnosing cervical dysplasia

- p16 staining in the immature metaplastic squamous epithelium is typically patchy with sparing of the basal pr[emalignant and malignant lesions of the cervix]
- Patchy p16 staining in normal cervical squamous epithelium.
- Diffuse/block positive expression of p16 in HSIL.
- The p16 staining meets the criteria of continuous basal positivity with upward extension to the lower one-third of the epithelial thickness, qualifying as diffuse/block positive. Note that this does not necessarily determine lesion grade, which should be assessed morphologically
- up to 50% of LSIL (HPV/CIN1) is also p16 positive; p16 immunohistochemistry does not replace conventional grading.

Use P16

1.When the H & E morphological differential diagnosis is between pre cancer and a mimic of this:

- Immature squamous metaplasia
- Atrophy
- Reparative epithelial changes
- tangential cutting

2.When H & E morphological diagnosis is CIN2 or above to clarify the situation:

- If P16 is negative then its not a high grade lesion
- It could be a low grade lesion or non HPV associated pathology

Use P16

3. When there is professional disagreement and the DD includes CIN

4. When the biopsy is CIN1 or lower but HRHPV positive/ cytology shows high grade dyskaryosis/ borderline smear with HRHPV positive or borderline in glandular cells - these cases are at risk of missing high grade disease

Note p16 use is not recommended otherwise in routine practice

P16 in normal squamous epithelium and in immature squamous metaplasia

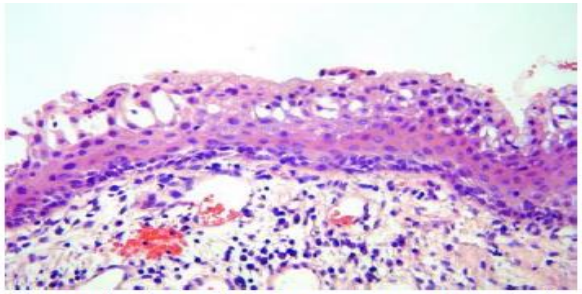


Figure 1a. Immature squamous metaplasia of the cervix.

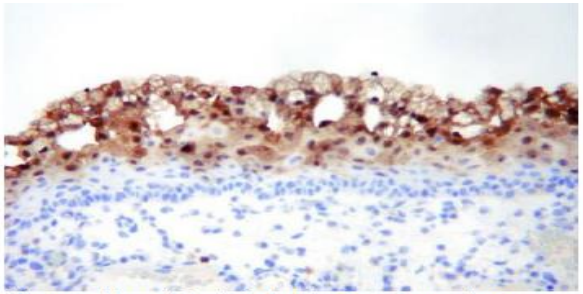


Figure 1b. p16 staining in the immature metaplastic squamous epithelium is typically patchy *with sparing of the basal layer*.

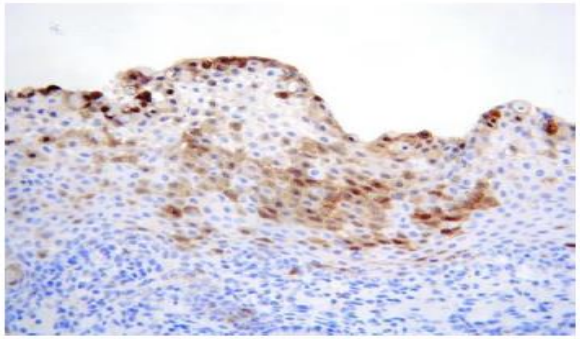


Figure 1c. Patchy p16 staining in normal cervical squamous epithelium.

Normal/reactive expression patterns in glandular epithelium (Figure 2)

Guidance document: p16 IHC reporting in anogenital neoplasia version 1.0, dated August 2018

Abnormal expression in squamous epithelium

- **Reporting terminology:**
  - Use of the word 'positive' is not recommended in pathology reports owing to potential for confusion.
  - Report as
    - PRESENCE vs ABSENCE OF ABNORMAL (DIFFUSE/BLOCK POSITIVE) EXPRESSION

      OR
    - ABNORMAL (DIFFUSE/BLOCK POSITIVE EXPRESSION) vs NEGATIVE/NORMAL expression

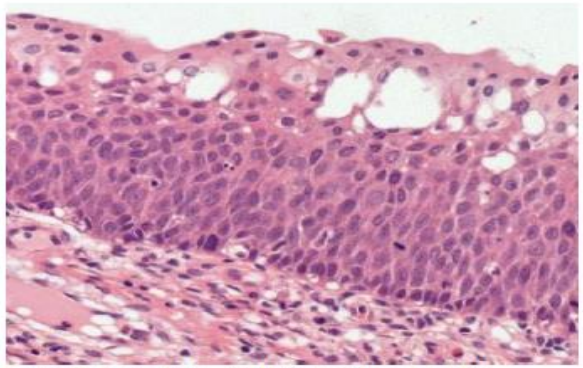


Figure 3a. HSIL (CIN2) of the cervix.

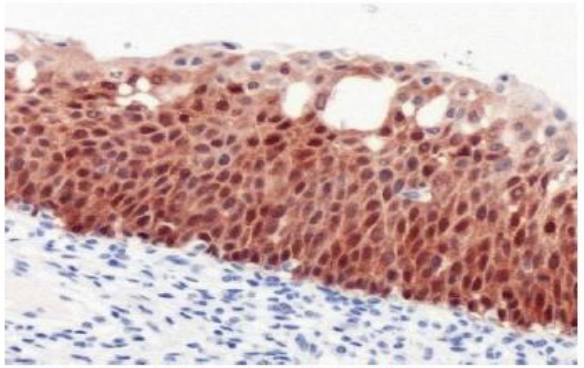


Figure 3b. Diffuse/block positive expression of p16 in HSIL.

Guidance document: p16 IHC reporting in anogenital neoplasia version 1.0, dated August 2018

P16 Use in low grade and high grade lesions

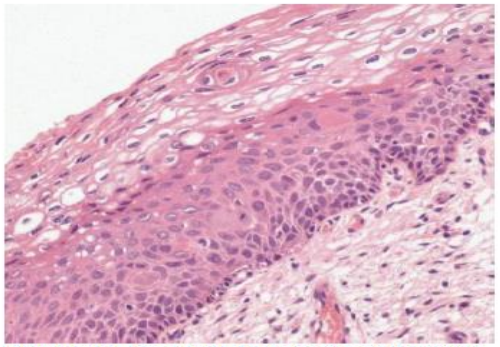


Figure 4a. Cervical squamous epithelium with morphological features indeterminate between HSIL and LSIL.

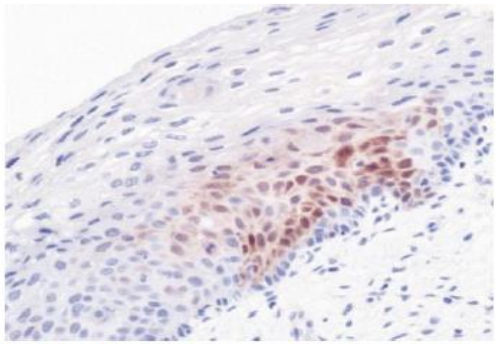


Figure 4b. Patchy non-block staining for p16 supports the diagnosis of a non-hrHPV-associated LSIL in this context.

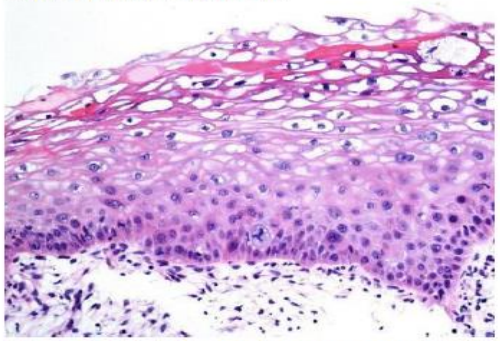


Figure 5a. Cervical squamous epithelium with maturation pattern resembling LSIL but atypical mitotic figure concerning for HSIL.

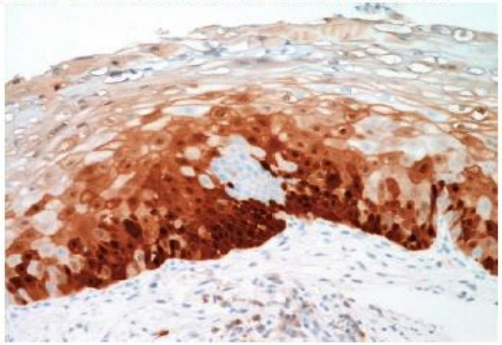


Figure 5b. The p16 staining meets the criteria of continuous basal positivity with upward extension to the lower one-third of the epithelial thickness, qualifying as diffuse/block positive. Note that this does not determine lesion grade, which should be assessed morphologically.

P16 and SCC

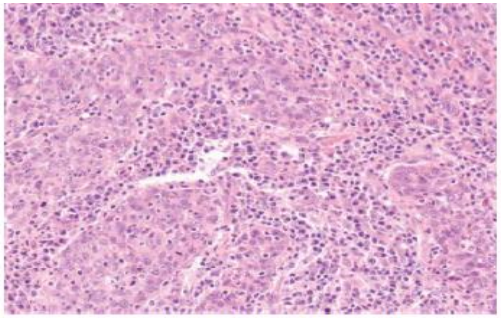


Figure 6a. Cervical squamous cell carcinoma, non-keratinizing type.

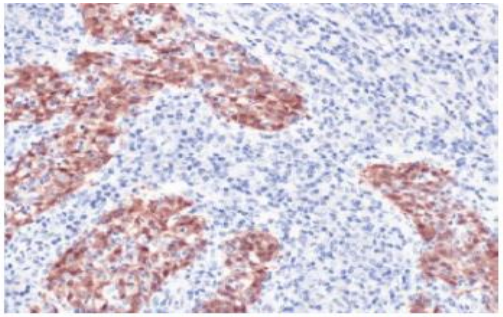


Figure 6b. Diffuse p16 staining in the carcinoma cells are typical of hrHPV-associated carcinoma.

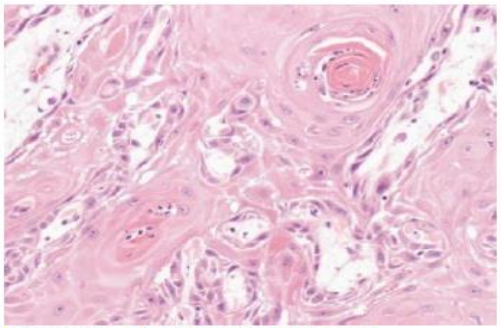


Figure 7a. Vulval squamous cell carcinoma, keratinizing type.

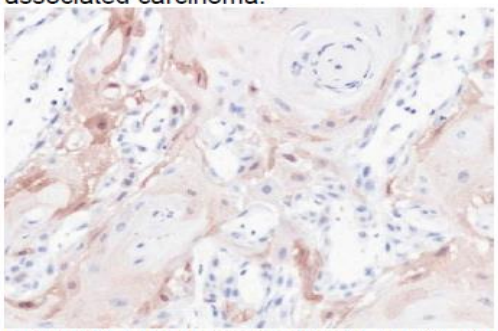


Figure 7b. Focal non-block p16 staining in the absence of continuous basal positivity is in keeping with an HPV-independent aetiology.

P16 in glandular epithelium

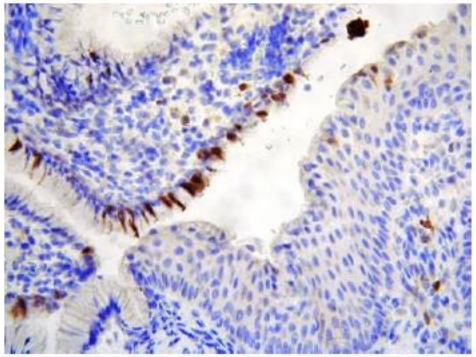


Figure 2a. Normal endocervical glandular epithelium may occasionally exhibit patchy p16 staining.

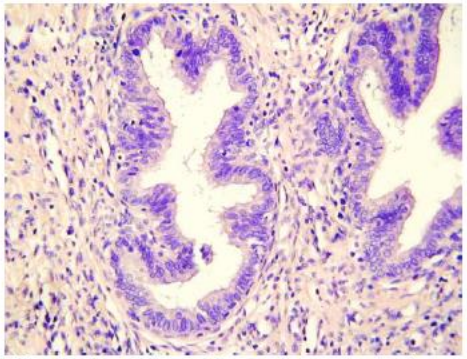


Figure 2b. Tuboendometrial metaplasia of the cervix can sometimes mimic adenocarcinoma in-situ with the nuclear pseudostratification and mitotic activity.

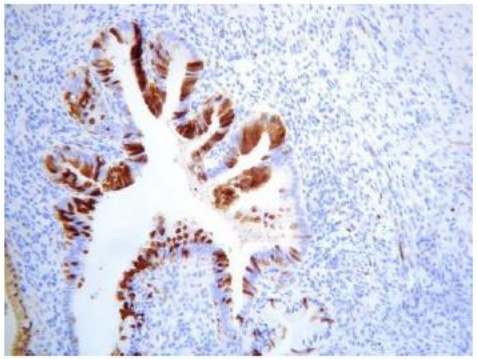


Figure 2c. Patchy p16 staining with mosaic pattern is typically found in tuboendometrial metaplasia of the cervix.

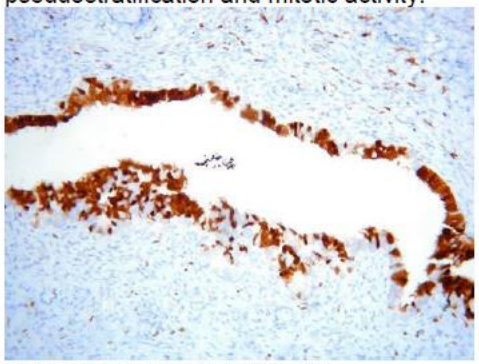


Figure 2d. The p16 staining in tuboendometrial metaplasia is sometimes quite extensive, although usually with

Guidance document: p16 IHC reporting in anogenital neoplasia version 1.0, dated August 2018

High Grade Cervical Glandular intraepithelial Neoplasia (HG CGIN)

- **Reporting terminology:**
  - Use of the word 'positive' is not recommended in pathology reports owing to potential for confusion.
  - Do not use the term 'block-type' for glandular lesions as this term relates specifically to squamous lesions
  - Report as PRESENCE vs ABSENCE OF ABNORMAL DIFFUSE POSITIVE

    OR

  - ABNORMAL DIFFUSE POSITIVE vs NEGATIVE/NORMAL/PATCHY expression

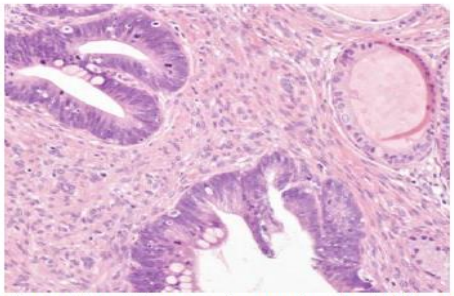


Figure 8a. Adenocarcinoma in-situ (AIS) of the cervix (high-grade cervical glandular intraepithelial neoplasia; CGIN).

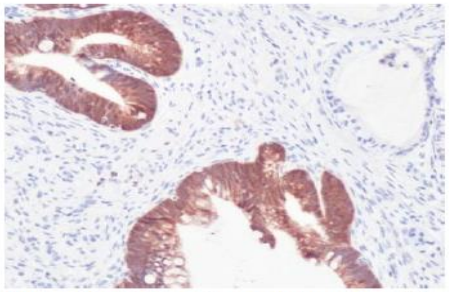


Figure 8b. Diffuse strong staining for p16 is present in the neoplastic glands, contrasting with the adjacent negative normal gland.

Guidance document: p16 IHC reporting in anogenital neoplasia version 1.0, dated August 2018

P16 in Cervical Adenocarcinoma

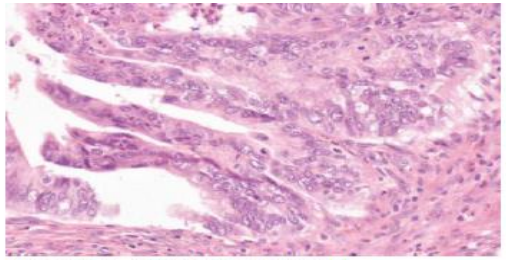


Figure 9a. Usual endocervical adenocarcinoma of the cervix.

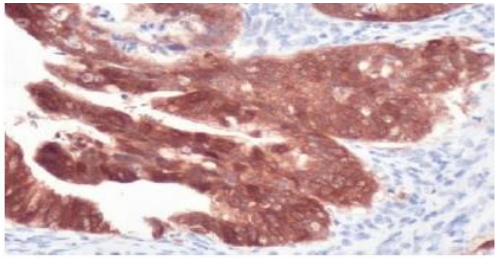


Figure 9b. Typical diffuse positive p16 staining is seen in this hrHPV-associated adenocarcinoma.

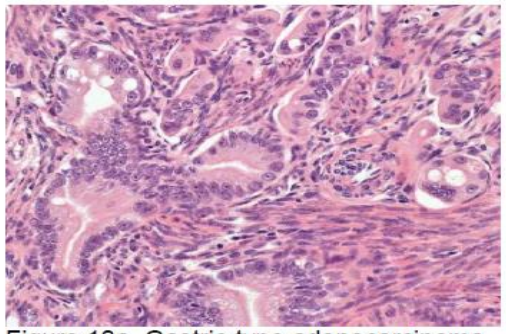


Figure 10a. Gastric-type adenocarcinoma of the cervix.

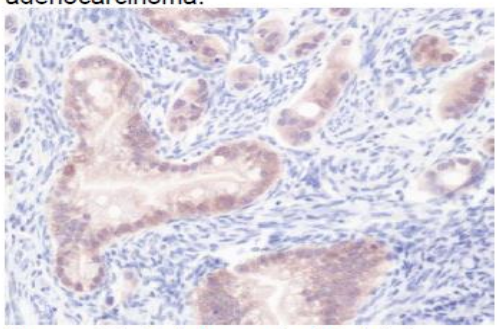
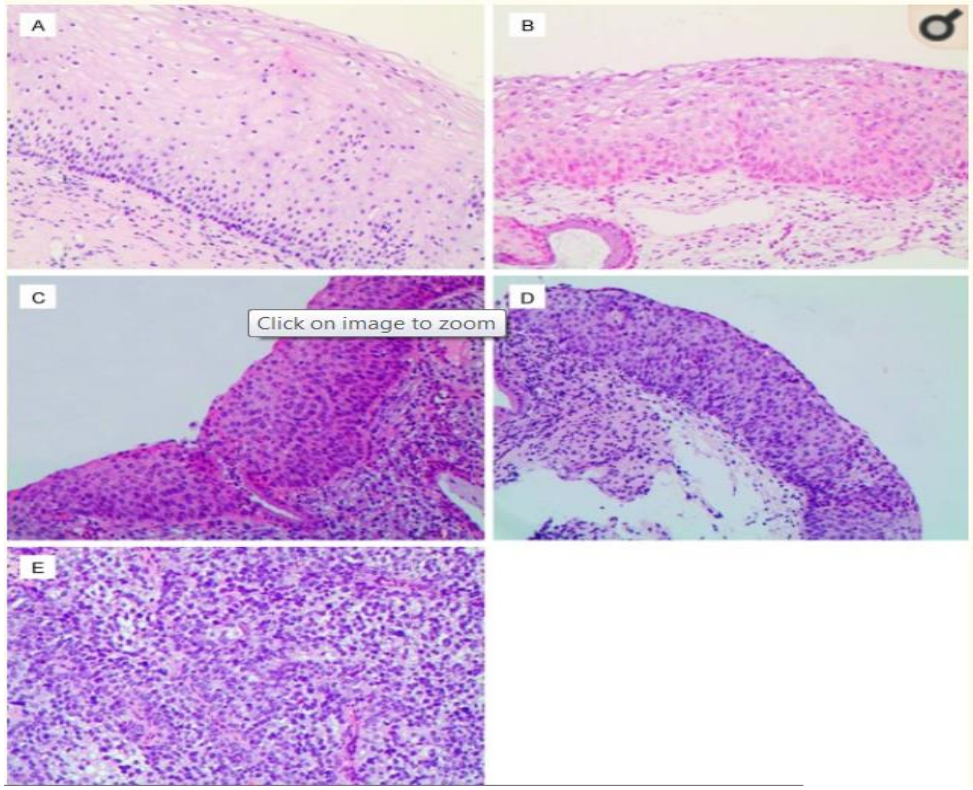


Figure 10b. Patchy weak p16 staining reflects the HPV-independent nature of this tumour.

Ki 67

- Similar to p16, Ki-67 is overexpressed in CIN 2/3, SCC, adenocarcinoma in situ and adenocarcinoma
- However, in contrast to p16, Ki-67 is also overexpressed in the basal cells of normal squamous mucosa and in benign proliferative lesions, including basal cell hyperplasia of the squamous mucosa
- Therefore, a combination of p16 and Ki-67 immunostaining is recommended for specificity in distinguishing LSIL versus HSIL from its mimickers, as opposed to using each immunostaining marker alone

Ki 67 in assessing dyspalsia



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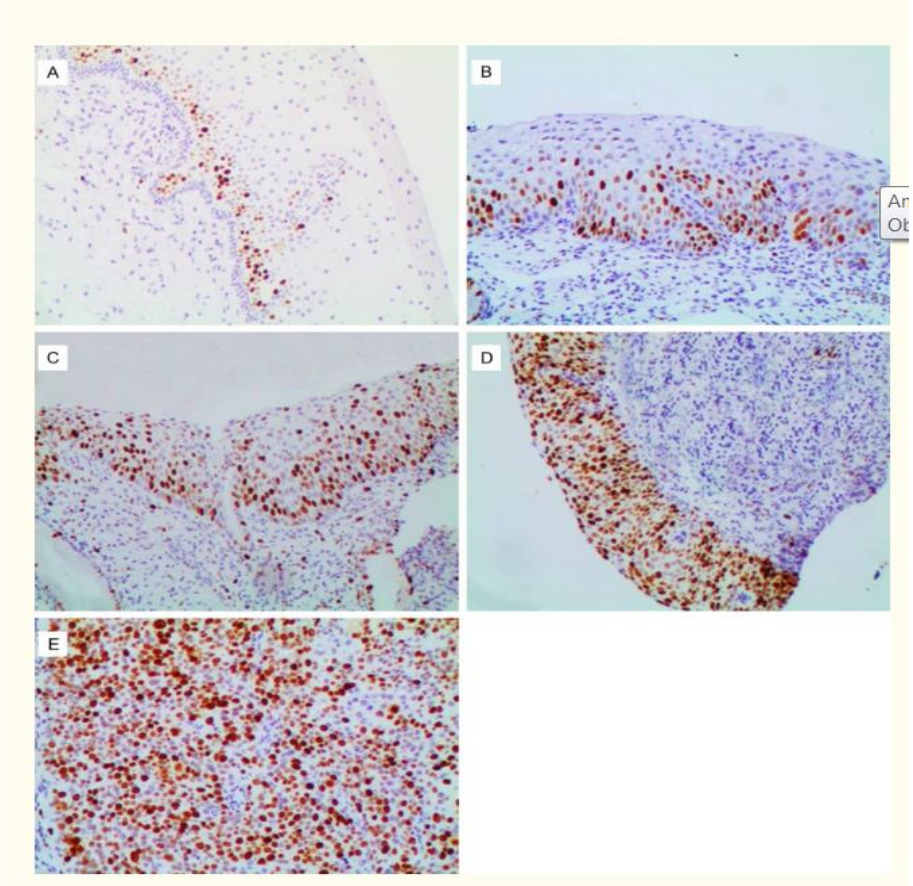
Ki 67 in dysplastic cervical epithelium



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Use of P16 and Ki 67 to diagnose dysplasia in cervix

Journal List › Oncol Lett › PMC4734260

ONCOLOGY LETTERS
SPANDIDOS PUBLICATIONS

Oncol Lett. 2016 Feb; 11(2): 1447–1452.
Published online 2015 Dec 31. doi: 10.3892/ol.2015.4071

PMCID: PMC4734260
PMID: 26893758

Efficacy of p16 and Ki-67 immunostaining in the detection of squamous intraepithelial lesions in a high-risk HPV group

SHARON LIM,[1] MI JA LEE,[1] INJU CHO,[1] RAN HONG,[1] and SUNG CHUL LIM[1,2]

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P16 and Ki67 in High grade lesions

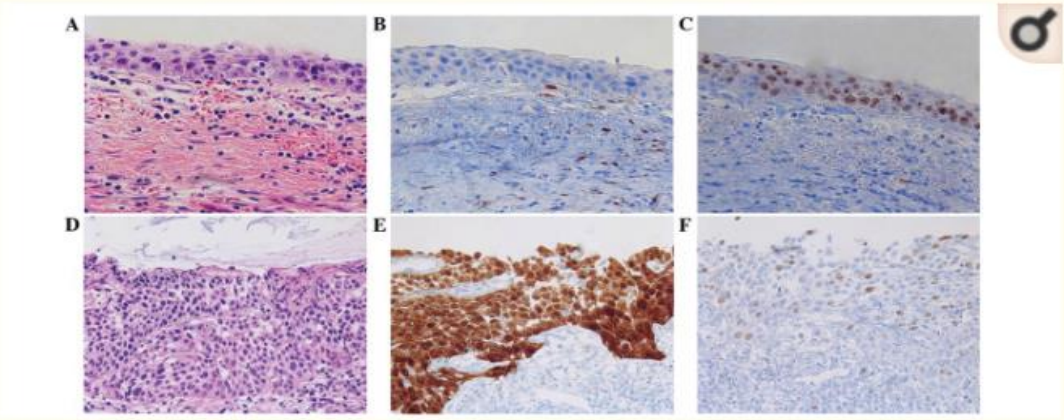


Figure 2.

Upper row shows a high-grade squamous intraepithelial lesion (HSIL) in the human papilloma virus (HPV)-negative group. (A) Hematoxylin and eosin staining. Immunohistochemical staining, revealing (B) negative staining for p16 and (C) increased expression of Ki-67 (score 3) in the full thickness of the upper third area. Lower row shows HSIL in the high-risk-HPV group. (D) Hematoxylin and eosin staining. Immunohistochemical staining, revealing (E) strong block positivity of p16 and (F) an increase in Ki-67 expression in the full thickness of the sample. Magnification, ×200.

Combined p16 and Ki67

- Immunostaining may improve the diagnostic reproducibility and accuracy of the CIN lesion.
- Previous studies have demonstrated that p16 and Ki-67 are co-expressed in almost 100% of cases of high-grade squamous and glandular lesions, and these markers are rarely co-expressed in normal or benign lesions of cervical epithelial lesion

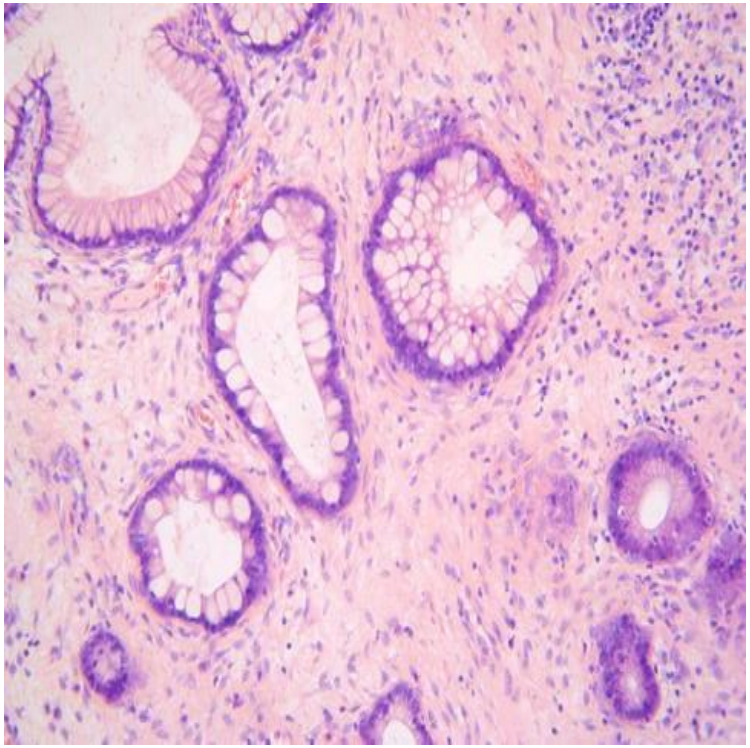
HG CGIN (WHO - AIS)

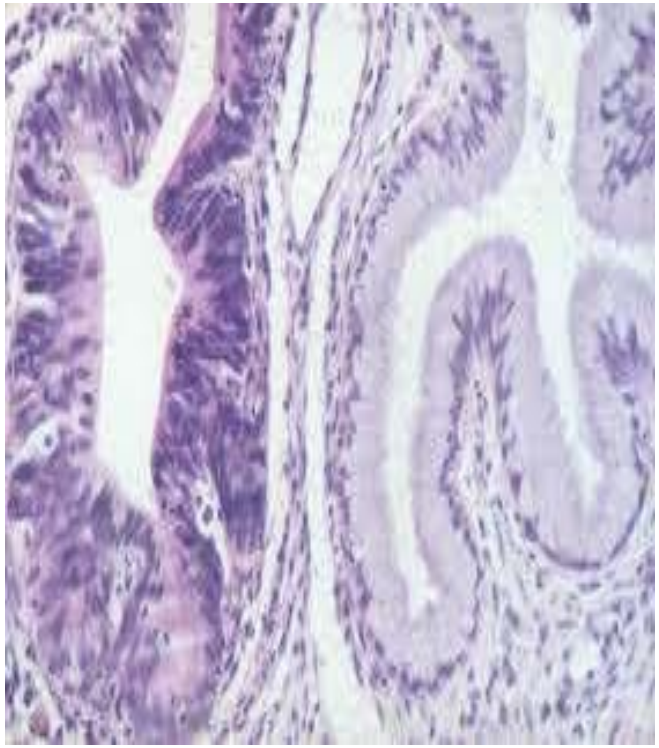
- We don’t diagnose Low Grade CGIN (WHO-EGD)
- HGCGIN is associated with transforming HRHPV infections
- 1% of insitu lesions
- 50% associated with high grade squamous abnormalities
- HG CGIN types:

  1- Endocervical types

  2- Intestinal type (goblet cells present)
- P16 positive, Ki67 high, negative for CK14 and P63
- Can progress to invasive adenocarcinomas

Intestinal type and endocervical type HG CGIN





Benign mimics of CGIN and adenocarcinoma

- TEM
- Endometriosis
- Microglandular hyperplasia
- Inflammatory atypia
- Mesonephric remanants
- Endocervical hyperplasia
- Tunnel clusters
- Deep cervical glands
- Endocervicosis
- Atypical oxyphil metaplasia

Benign mimics of CGIN and adenocarcinoma

- Adenomyoma
- • Radiation effects
- • Ectopic prostate
- • Arias-Stella effect
- • Florid cystic endosalpingiosis
- • Cautery artefact
- • Mullerian papilloma
- • Villous adenoma

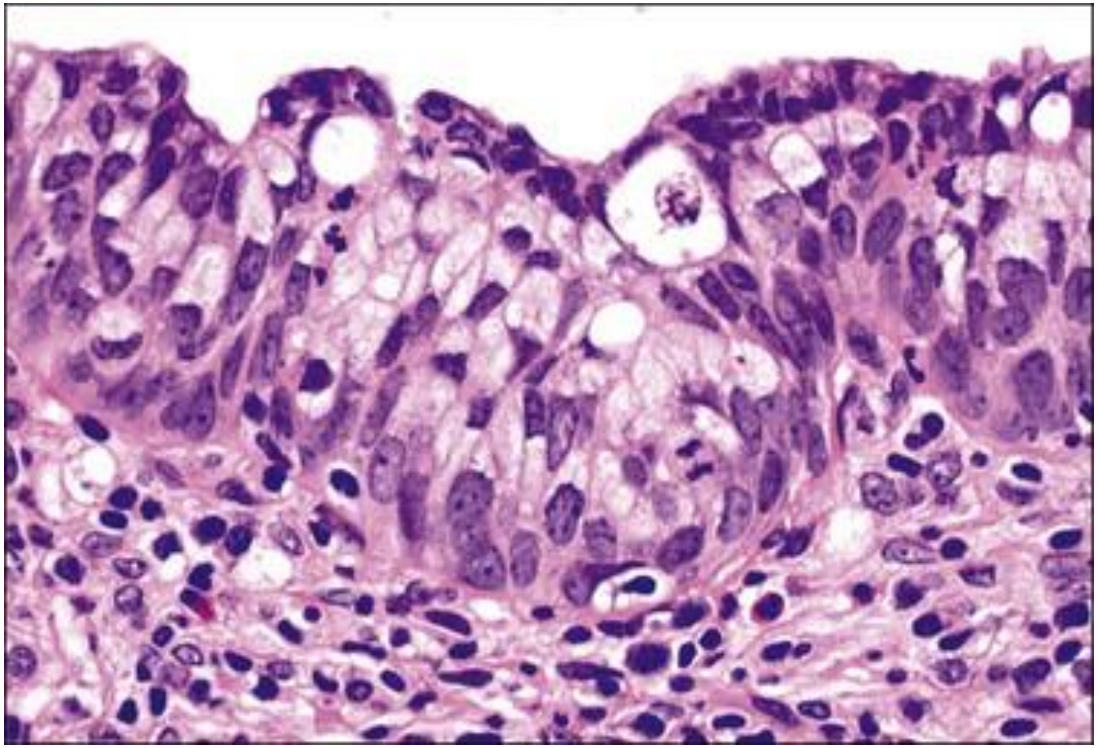
SMILE (Stratified Mucin producing Intraepthelial LEsion)

- Stratified mucin-producing intraepithelial lesion (SMILE) is an uncommon premalignant lesion of the uterine cervix . It is thought to arise from the reserve cells of the transformation zone throughout the full epithelial thickness of a lesion, with some overlap with the architecture of squamous intraepithelial lesion (SIL) or adenocarcinoma in situ (AIS)
- SMILE is characterized by several histopathological features, including epithelial stratification, diffuse mucin production throughout the epithelial layers, and an absence of classic gland formation ; nuclear atypia, hyperchromasia, mitosis, and apoptotic bodies are often observed in the lesion, which is similar to other forms of intraepithelial neoplasia including usual-type AIS of the endocervical glandular epithelium.

SMILE

- There is limited information available on the involvement of high-risk HPV in the pathogenesis of SMILE
- However, P16 positive and Ki67 high
- Negative for P63 and CK14, DPAS positive
- SIL and AIS may coexist with SMILE, which is not surprising given their association with HPV infection
- it may also be confused with reactive endocervical glandular cells that tend to have finely dispersed nuclear chromatin with prominent nucleoli, in contrast to the cells in SMILE that exhibit increased nuclear density with inconspicuous nucleoli.
- High grade lesion and treated like HG CGIN

SMILE



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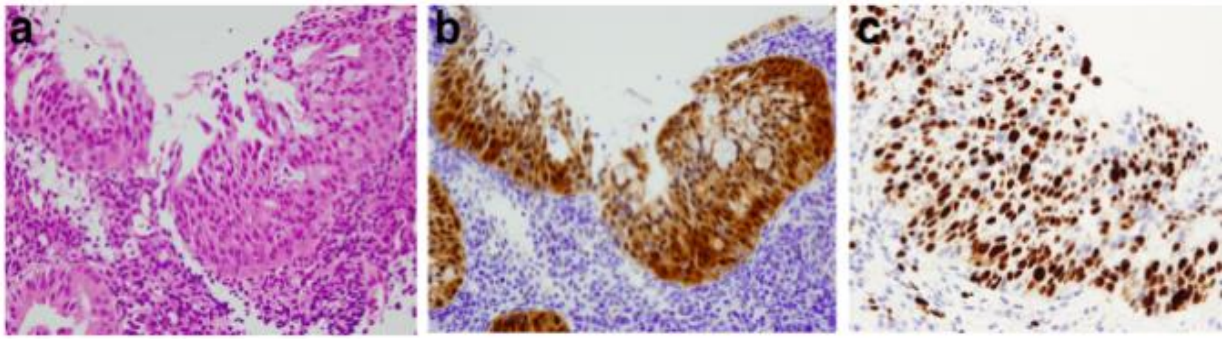
SMILE

Fig. 2



Histopathological examination. **a** Histopathological examination of SMILE. The lesion comprised heterotypic cells staining positive for mucin. **b**, **c** Immunohistochemical detection of p16INK4a (b) and MIB-1 (Ki-67) (c) in a SMILE revealed diffusely positive and positive staining, respectively, throughout the epithelial layer

Invasive stratified mucin-producing carcinoma (i-SMILE)

- invasive stratified mucin-producing carcinoma believed to be arising from SMILE
- Similar morphological features
- a recently recognized subtype of cervical adenocarcinoma (AC) developing in a background of a stratified mucin-producing intraepithelial lesion (SMILE).
- Clinical and prognostic data on i-SMILE are limited
- Clinically, i-SMILE may represent an aggressive tumor with early recurrent disease and substantial risk of distant metastatic disease, especially to the lungs.

FIGO 2009

The Royal College of Pathologists
Pathology: the science behind the cure

Standards and datasets for reporting cancers

Dataset for histological reporting of cervical neoplasia (3rd edition)

April 2011

Authors: Dr Lynn Hirschowitz, NHS Foundation Trust Metchley Park, Birmingham
Dr Raji Ganesan, Birmingham Womens Hospital, Birmingham
Dr Naveena Singh, Barts and the London NHS Trust, London
Professor W Glenn McCluggage, Royal Group of Hospitals, Belfast

Unique document number	G071
Document name	Dataset for histological reporting of cervical neoplasia
Version number	3
Produced by	Dr Lynn Hirschowitz, Dr Raji Ganesan, Dr Naveena Singh and Professor W

FIGO 2009

Appendix A **TNM[43] AND FIGO[42] pathological staging of cervical carcinoma**

TNM category	FIGO stage	Definition
T1	I	Cervical carcinoma confined to the uterus (extension to the corpus should be disregarded)
T1a	IA	Invasive carcinoma, diagnosed only by microscopy, with deepest invasion ≤ 5.0 mm and largest extension ≤ 7.0 mm.
T1a1	IA1	Measured stromal invasion ≤ 3.0 mm and ≤ 7.0 mm
T1a2	IA2	Measured stromal invasion of > 3.0 mm and not > 5.0 mm with an extension of not >7.0 mm
T1b	IB	Clinically visible lesion limited to the cervix uteri or pre-clinical cancers greater than stage IA*
T1b1	IB1	Clinically visible lesion ≤ 4.0 cm in greatest dimension
T1b2	IB2	Clinically visible lesion > 4.0 cm in greatest dimension
T2	II	Cervical carcinoma invades beyond the uterus but not to the pelvic wall or to lower third of the vagina
T2a	IIA	Without parametrial invasion
T2a1	IIA1	Clinically visible lesion ≤ 4.0 cm in greatest dimension
T2a2	IIA2	Clinically visible lesion > 4.0 cm in greatest dimension
T2b	IIB	With obvious parametrial invasion
T3	III	The tumour extends to the pelvic wall and/or involves lower third of the vagina, and/or causes hydronephrosis or non-functioning kidney**
T3a	IIIA	Tumour involves lower third of vagina, with no extension to the pelvic wall
T3b	IIIB	Extension to the pelvic wall and/or hydronephrosis or non-functioning kidney

FIGO staging changes from 2009 to 2018

Guidance

Cervical Screening Programme: histopathology reporting handbook

Updated 15 November 2019

Contents

THE BRITISH ASSOCIATION OF GYNAECOLOGICAL PATHOLOGISTS

2018 FIGO Staging System for Cervical cancer: Summary and comparison with 2009 FIGO Staging System

Authors: Naveena Singh[1], Brian Rous[2], Raji Ganesan[3]
[1]Barts Health NHS Trust, [2]Cambridge University Hospitals NHS Trust, [3]Birmingham Women's Hospital, UK

Background:

- Until now FIGO staging for cervical cancer has been based mainly on clinical examination.
- In 2018, this approach has been revised to allow imaging (r) and pathology (p) findings, where available, to assign stage.
- The revised staging is summarised below together with a comparison with the 2009 FIGO staging system and comments indicating areas of change.
- Salient changes:
  - *The horizontal dimension is no longer considered in defining the upper boundary of a Stage IA carcinoma.*
  - *The diagnosis of Stage IA1 and IA2 carcinomas is made on microscopic examination of a surgical specimen, which includes the entire lesion. The margins of an excision specimen should be reported to be negative for disease.*
  - *If the margins of the cone biopsy are positive for invasive cancer, the patient is assigned to Stage IB1.*
  - *Stage IB has been sub-divided into IB1, IB2 and IB3 based on maximum tumour size.*
  - *The revised 2018 system includes nodal status; the presence of nodal involvement in a tumour of any size upstages the case to Stage IIIC, with IIIC1 indicating pelvic and IIIC2 indicating para-aortic nodal involvement. The revised FIGO classification is thereby now more closely aligned with the structure of the TNM classification.*

It has been agreed to implement the 2018 FIGO staging system in the UK from 1 January, 2020. For consistency of data collection by Screening Programmes and Cancer registration, the BAGP recommends recording both the 2009 and 2018 FIGO stages within reports in the meantime, although it is important that data returns (COSD, invasive cervical cancer audit, etc) continue to use 2009 FIGO stage until notified otherwise. Clinical management decisions will currently be based on FIGO 2009 stage until new guidelines are established.

BAGP Information document: 2018 FIGO staging System for Cervix Cancer, version 1.2, February 2019.

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FIGO staging update for cervical cancer

- Previous 2009 and current 2018 FIGO staging systems are slightly different
- Until now FIGO staging system was mainly based on clinical examination
- In 2018 this approach has been changed to include imaging (r) and pathology (p) findings
- Revised 2018 FIGO staging:

1. The horizontal dimension is no longer considered in defining the upper boundary of stage1A carcinoma
2. The diagnosis of stage 1A1 and 1A2 is made on microscopic examination of the entire lesion in a margin negative specimen

FIGO 2018

- Revised 2018 FIGO staging:

3. If the margins of a cone biopsy are positive then the patient is given a stage 1B1

1. Stage 1B has been subdivided into 1B1,1B2 and 1B3 based on the size of the lesion
2. Incudes nodal status; positive nodes upsatge any tumour to stage 111C;

111C1- pelvic node involvement

111C2- para aortic node involvement

FIGO 2018

- BAGP advised to use FIGO 2018 from 1/1/2020 in the UK
- For consistency in data collection by NHSCSP and cancer registry currently we have to document both 2009 and 2018 staging
- Clinical management is currently based on FIGO 2009

Thank you!

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