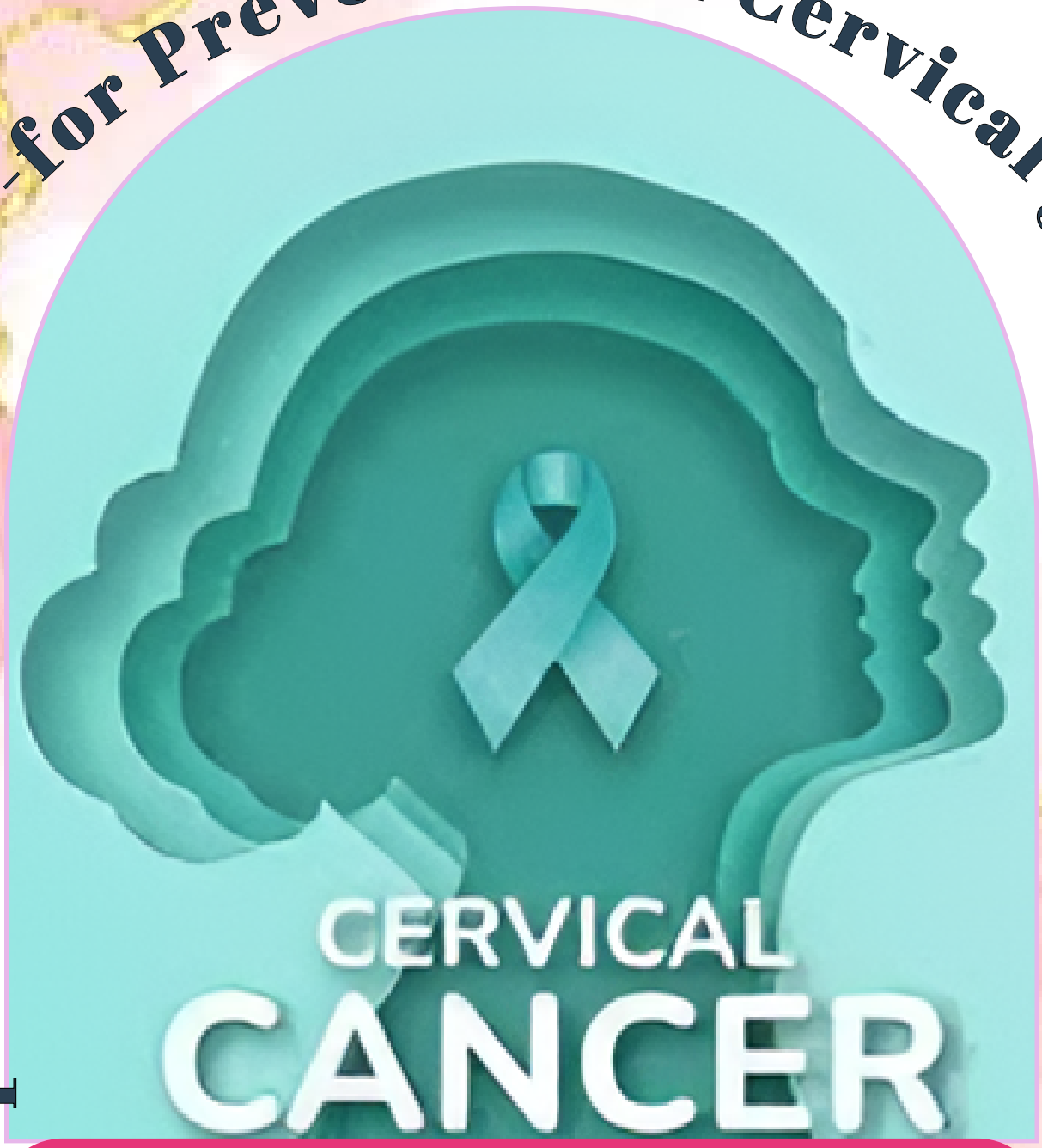
Update on HPV Vaccine - for Prevention of Cervical & HPV Related Cancers



DELHI GYNAECOLOGIST FORUM

Issue No. 2 Oct 2024

From Secretary Desk

Dr Sharda Jain
Secretary General DGF

It is with great pride that we relaunch the quarterly bulletin of the Delhi Gynecologist Forum after a six year gap, now as e-bulletin. this digital platform will enable us to share insights & advancements more efficiently with our community.

The theme of our inaugural issue- “Cancer Cervix Prevention in Bharat of 2024” --is aligned with the WHO’s 90/70/90 call to action :90% of girls vaccinated, 70% screened & 90% of cases treated.

Cervical cancer is one of the most preventable cancers, yet it still claims many lives in Bharat. Through this issue, we explore the latest tools & strategies that can turn the tide, especially in under - resourced areas.

We hope this e-bulletin will inspire action & faster collaboration as we work towards eliminating cervical cancer in Bharat.

From Editor Desk

Dr Sujata Agarwal
Editor DGF ,Cultural Secretary DGFS
Secretary Delhi Chapter of ISAR

It is my esteemed privilege to publish first bulletin of the Delhi Gynecologist Forum. In today's world, we are increasingly exposed to pollution, plastic, insecticides, and chemicals, making us more susceptible to various diseases, including cancer. However we can safeguard our community through increased awareness, particularly about cervical cancer vaccination. This bulletin is dedicated to the prevention and early treatment of cervical cancer. I extend my heartfelt thanks to all my mentors for their guidance and for granting me this opportunity.

Dr Dipti Nabh
President Elect, EDGF
Co-Editor , DGF E -Bulletin

Dear colleagues

Together we can make a significant impact on reducing cervical cancer incidence .Let's actively promote HPV vaccination, ensure timely screenings, and educate our patients on prevention. Early intervention saves lives -let's work towards a future free of cervical cancer

The WHO Global strategy for eliminating cancer cervix 90-70-90 by 2030 has to be a 100% achievable target

Dr Leena N Sreedhar
Co-Editor , DGF E -Bulletin

See and treat is my mantra and HPV vaccination is my commitment to my patients and to my country!!

Warm Regards!!!

Dr Divya Singhal
Co-Editor
immediate past president DGF

Dear Friends

Congratulations to DGF members on the launch of the newest kid on the block , the "DGF Bulletin"!

Prevention of Cervical Cancer is the theme for this bulletin. Every 8 minutes an Indian woman loses her life to cancer cervix , which is a 100% preventable disease. If Australia , USA can reach near zero mortality , then why cant we in India? There is nothing impossible . Lets join hands , lets prevent Cancer Cervix.

Dr Shalini Chawla Khanna
Co-Editor , DGF E -Bulletin

We are delighted to launch the DGF E-Bulletin, which will be published quarterly. It is very important to keep ourselves abreast of the recent advances in the field of medicine. Our vision & mission is to impact knowledge & reach the grass root level so that we all follow the evidence-based medicine. Our inaugural issue is dedicated to the prevention of Cervical cancer & make India “Cervical Mukt Bharat”, vision & foundation laid by Dr Sharda Jain. The authors, with their vast knowledge & wisdom, have given beautiful insight into the topic.

Warm Regards!!!

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SCREENING OF PRE CANCEROUS LESIONS OF CERVIX

Dr Divya Singhal
MBBS,DGO, FICOG
Imm Past President DGF-North.

AIM: To screen and treat pre-cancerous lesions of the cervix as a secondary prevention method recommended by WHO.

Causes Of Cervical Cancer:

- HPV(Human Papilloma Virus)
- Multiple sexual partners
- Use of oral contraceptive pills
- Smoking
- Early age at first intercourse

Detection of pre cancerous lesions is by following Methods:

1. PAP Smear (Conventional & LBC)
2. Primary HPV Testing
3. PAP + HPV Testing (Co-testing)
4. VIA (Visual Inspection with Acetic Acid) & VILI (Visual inspection with Lugo's Iodine)
5. Colposcopy
6. Cervical biopsy

Screen

Procedure:

Screen & Treat Method

1. Cervical lesion highlighted by color change through VIA (Visual Inspection with Acetic Acid).

2. 3-5% acetic acid solution is applied to the cervix, and visual inspection is done after 1 minute.
3. Positive results show acetowhite areas, indicating inflammation, precancerous lesions, or cancer.
4. Lugo's Iodine is applied to the cervix fir 1 minute, yellow discoloration indicates inflammation, ectropion, or pre cancerous lesion (VILI)
5. Treatment is conducted immediately in the same sitting using *Cryotherapy* or Thermoablation.

Benefits:

- Effective, cheap, and quick.
- Single-visit approach, reducing loss to follow-up.
- Suitable for low-resource settings.

See and Treat or Screen, Triage, & Treat Method:

Process:

1. Detection through Co-Test (PAP + HPV), PAP test alone, or HPV Primary testing.
2. If abnormal, Colposcopy, VIA, VILI, and Swede Score are performed.
3. Cervical biopsy taken from suspicious areas and sent for histopathology.

Table :Accuracy of cervical Cancer Screening Tests

Test	Sensitivity (%)	Specificity (%)
Cytology	62.5-72.9%	90.3-96.6%
Visual Insoection with acetic acid	74.2-79.4%	85.2-858%
HPV DNA Testing	94%	88%
HPV Human Papilloma Virus		

	GOOD RESOURCE SETTING	LIMITED RESOURCE SETTING
MODALITIES	HPV Testing • Primary HPV Testing • Co-testing (HPV & Cytology Cytology VIA Colposcopy	VIA (Affordable HPV testing may be introduced if feasible)
Target Age Group (Years)	21-65 (ACOG)	21-65 pls note :in postmenopausal women,VIA may not be effective
Age to start (years)	Cytology at 21 Primary HPV Testing/Co-Testing at 30	VIA at 30
Frequency	Primary HPV Testing or Co-Testing-every 5 years cytology-every 3 years	Every 5 Years (at least 1-3 times in a lifetime

Conclusion:

- HPV causes almost all cervical cancers.
- Prevention through HPV vaccination (9 years and above) is critical.
- Screening and treatment of pre-cancerous lesions can prevent cervical cancer.
- 100% prevention is possible through primary and secondary prevention strategies

Teachers of Teachers
Dr Sharda Jain

UPDATE ON HPV VACCINE: PREVENTION OF CERVICAL AND HPV-RELATED CANCERS

DR. SUJATA AGRAWAL
DIRECTOR, IVY HEALTH & INFERTILITY CENTRE,
HEART & GYNAE CLINIC SOUTH DELHI
EDITOR DGF
CULTURAL SECRETARY, DGFS
SECRETARY, DELHI CHAPTER OF ISAR

1. **HPV and HPV related Cancers: Global Burden**
   - Anal cancer: 50,865 cases
   - Cervical cancer: 604,127 cases
   - Vulvar and vaginal cancer: 63,146 cases
   - High-grade dysplasia: 10 million cases
   - **HPV-related diseases include:**
   - Cervical cancer: 100%
   - Vaginal cancer: 70%
   - Vulvar cancer: 40%
   - Anal cancer: 88%
   - Penile cancer: 50%
   - Oropharyngeal cancer: 13-56%
   - Genital warts: 100%
2. **Key Facts about HPV Infections and Cervical Cancer**
   - Timing of infection: HPV infections can occur at any stage of a woman's life, from menarche to menopause.
   - India's burden: India contributes to 1/5th of the global cervical cancer burden.
   - Age of occurrence: Cervical cancer is most commonly seen in women around 38 years old, during their reproductive years.
   - Risk factor: Early intercourse increases the risk of HPV-related cervical cancer. In India, the average age of first intercourse is 19.1 years.
   - At-risk women: Single women, women with one or multiple sexual partners, pregnant women, and postpartum women are all susceptible to HPV infections.

3. **Prevention and Control**

- Vaccination and screening: Regular cervical cancer screening and HPV vaccination are the two most effective ways to prevent cervical cancer.
- **WHO's Goal**
- 90% of girls vaccinated by age 15.
- 70% of women screened regularly.
- 90% of pre-cancerous conditions will be treated by 2030.

4. HPV Vaccination and Screening

HPV vaccination does not eliminate the need for routine Pap smear tests for early detection of cervical cancer. Screening must continue as recommended for all patients.

5. Available HPV Vaccines

Indian Perspective

1- Gardacil-4

2- Gardacil-9

3- Cervavac

Additional Notes:

- The HPV vaccine sequence should not be restarted if there's a delay in the second or third dose.
- The 9-valent HPV vaccine may continue a series started with a different HPV vaccine (bivalent or quadrivalent) using the same schedule (0, 1-2, 6).
- Additional doses of the 9-valent vaccine are not needed if a patient has completed a course with the bivalent or quadrivalent vaccine.
- The 9-valent vaccine's protection is primarily for cervical cancer in females.

6. Age Group Recommendations for Q4, Q9 (India)

- Q4: For girls and women aged 9 to 45 years.
- Q9: For both boys and girls.
- For girls: Gardasil 9 recommended from 9 to 26 years.
- For boys: Gardasil 9 recommended from 9 to 14 years.
- Cervavac recommended from 9-26 years both for boys & girls

7. Constituents of Q4/Q9

- Q4: Contains HPV serotypes 6, 11, 16, & 18.
- Q9: Contains HPV serotypes 6, 11, 16, 18, 31,33, 45, 52, & 58.

8. Inoculation Site

- Both Gardasil and Cervarix should be administered intramuscularly in the deltoid region of the upper arm or the anterolateral region of the thigh.

9. HPV Vaccination for HIV-Positive Patients

- All three doses should be administered. However, screening every 3 years is still required as the vaccine does not offer complete protection.

10. HPV Vaccination with Other Vaccines

- The HPV vaccine can be administered alongside other vaccines. If accidentally given during pregnancy, it's safe to withhold the rest of the doses until after pregnancy.

11. HPV Vaccination for Lactating Mothers

- The vaccine is safe for breastfeeding women.

12. HPV Risk and Normal Delivery

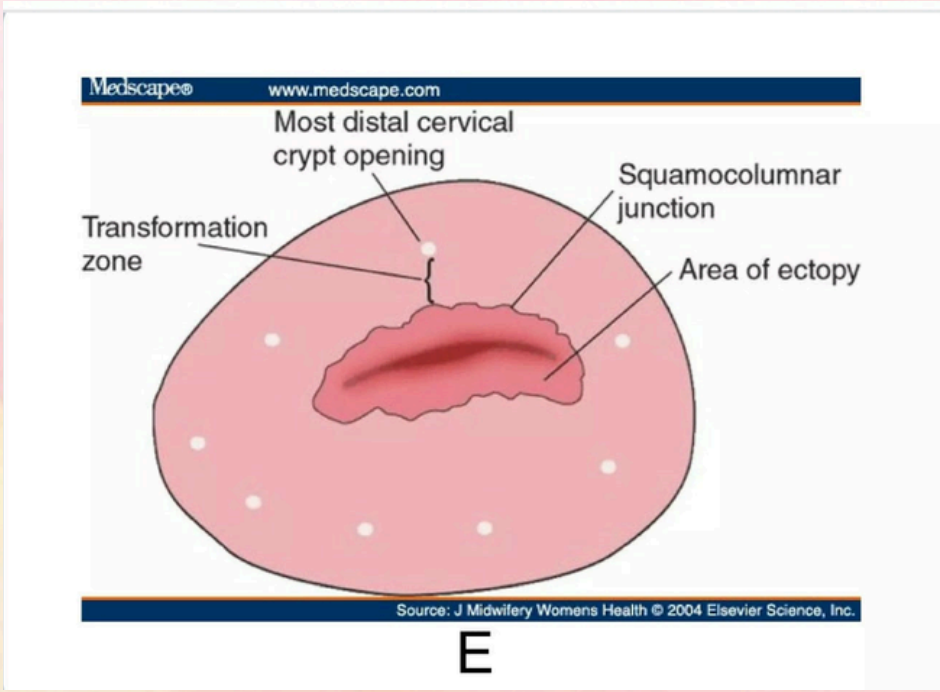
- Vaginal delivery may increase the risk of HPV infection due to cervical injuries, making HPV vaccination post-childbirth beneficial for women.

13. HPV vaccination does not cause infertility.

14. Adverse reaction after HPV vaccination-

No serious adverse effects are seen, it can be given safely to immuno compromised patients. Rare allergic and anaphylactic reactions are seen in few patients. It is advisable to stay in clinic for 20 minutes after vaccination

15. HPV vaccination should be given to a rape victim at the time of first examination



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TYPES OF HPV VACCINATION IN INDIA

Dr. (Lt.Col.) LEENA N SREEDHAR
HOD OBS-GYN MANIPAL HOSPIITAL
DWARKA DELHI
& HOD ACADEMICS & RESEARCH MANIPAL
HOSPITAL (NW CLUSTER)

There are 3 types of HPV vaccination available in India at this time.

1. The Quadrivalent HPV vaccine – GARDASIL 4
2. Nonvalent HPV vaccine – GARDASIL 9
3. Quadrivalent HPV Recombinant vaccine – CERVAVAC

1. **GARDASAL (QUADRIVALENT HPV VACCINE)**

•Helps protect against certain HPV related diseases and cancer caused by serotypes 6,11,16,18.
•Helps with 82.4% protection against cervical cancer.
•Globally studied vaccine for 26 years.
•Favorable safety profile.
•Cost Rs- 3927(MRP).
For girls and women aged 9-45 years and boys & men 9-26 years

2. GARDASIL 9 (NONVALENT HPV VACCINE)

•Helps protect against certain HPV related disease & cancer caused by serotypes 6,11,16,18 and 5 additional serotypes 31,33,45,52,58.
•Helps offers 98% protection against cervical cancer.
•Globally studied for 16 years .
•Favorable safety profile
•Lower incidence of HPV related cancer with Nonavalent HPV vaccine than Quadrivalent HPV vaccine.
•For girls & women , boy & men aged 9-26 years.
•Cost Rs- 10850(MRP)

3. CERVAVAC

•Helps protect against cervical , vulvar, vaginal and anal cancer caused by HPV types 16 & 18.

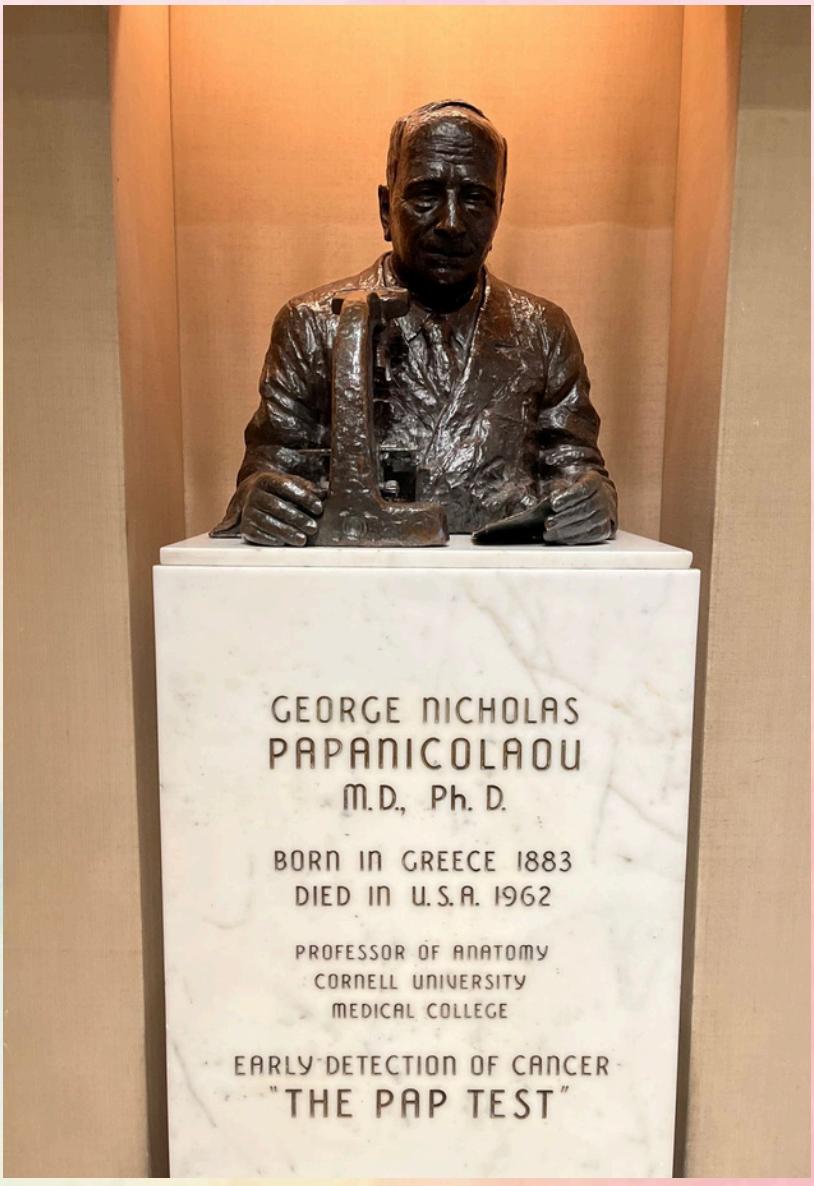
•It is indicated in girls , women, boys & men 9 years through 26 years of age.

•Not indicated in Lactating women.

•No long term immunogenicity data available

•No WHO prequalification.

•Cost Rs- 2000(MRP)

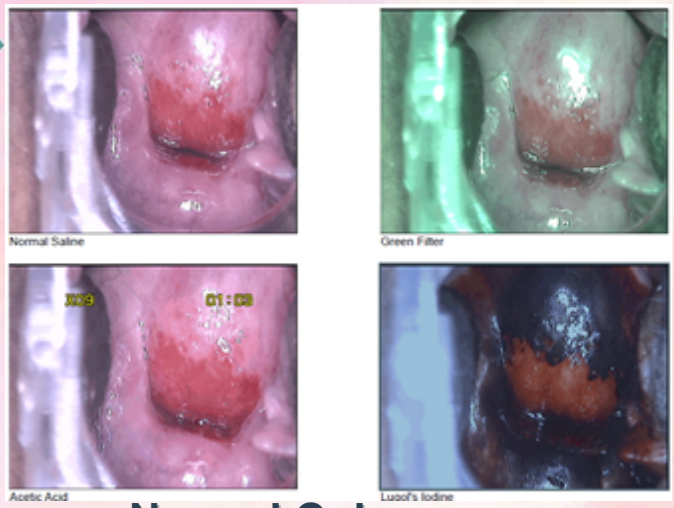


COLPOSCOPY
To Diagnose Cervical Lesions

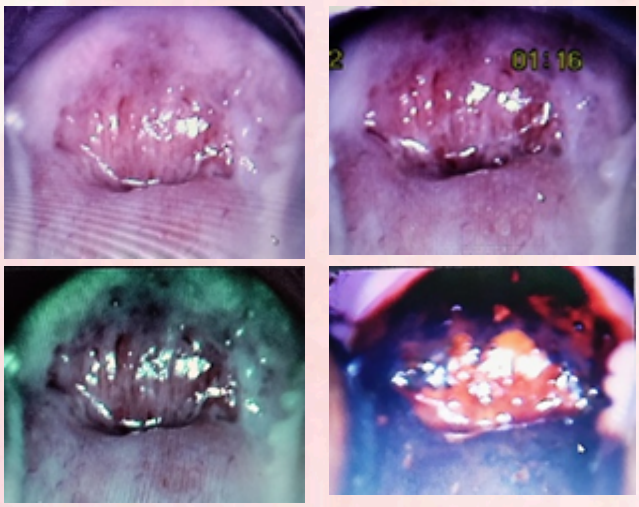
Dr. AMITA GUPTA
SENIOR CONSULTANT, OBSTETRICS AND GYNAECOLOGY (MAHARAJA AGRASEN HOSPITAL, DWARKA), PREVENTIVE ONCOLOGIST, COLPOSCOPIST,
DIRECTOR, MEDICAL CENTRE FOR WOMEN, BINDAPUR
EXECUTIVE MEMBER, DGF DWARKA

Procedure

- Painless OPD procedure.
- Ideally performed in the next visit after cytology/HPV DNA test report.
- Can be done immediately after taking cytology smear during the same visit.
- Active cervical or vaginal infection to be treated.
- Take informed consent.
- Patient placed in dorsal lithotomy position.
- Cervix exposed and localized in centre of visual field by using Cusco's speculum.
- Adjust focal length of colposcope.
- Clean cervix with normal saline gently to remove mucous or discharge.
- Examine under blue green filter for vascular patterns.
- Gently apply freshly prepared 3-5% acetic acid for 1 min. Look for acetowhite areas for next 1 min. Acetic acid coagulates the intracellular proteins, obscuring the passage of light which manifests as acetowhite areas.
- Apply Lugol's iodine. The mature squamous epithelium turns dark brown due to high glycogen content. The dysplastic cells remain iodine negative. The columnar epithelium remains unstained.
- Take punch biopsy from abnormal lesions. It should include stromal tissue along with SCJ. Collect specimen in formalin bottle.
- If bleeding, apply Monsel's paste.
- Endocervical curettage done in case of suspected endocervical lesions (avoided during pregnancy).



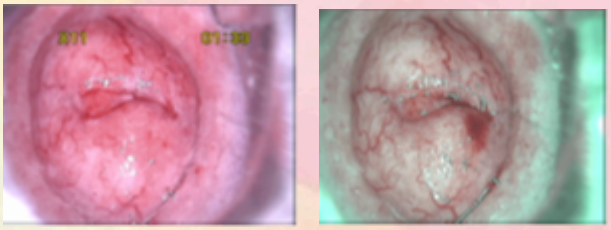
Normal Colposcopy



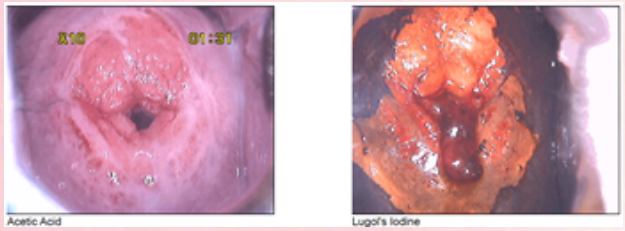
Chronic Cervicitis with CIN1

Post procedure Advice

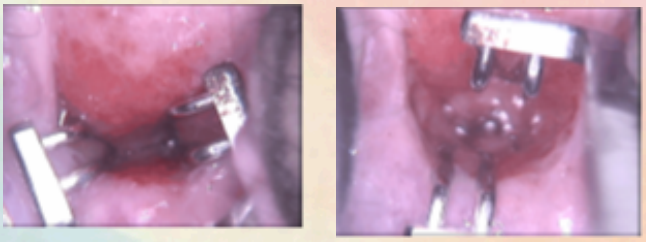
- To avoid sexual contact for 10 days.
- There may-be watery discharge for 7 days.
- To inform in case of excessive bleeding or discomfort
- Advice about HPV Vaccination
- Collect reports and follow up visit after 10 days



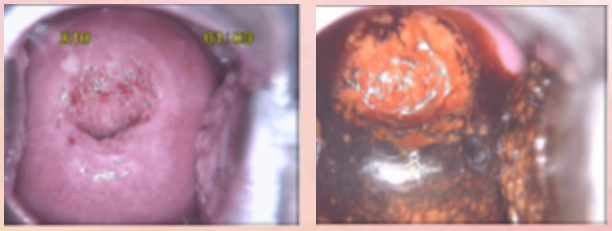
Large Ectropian



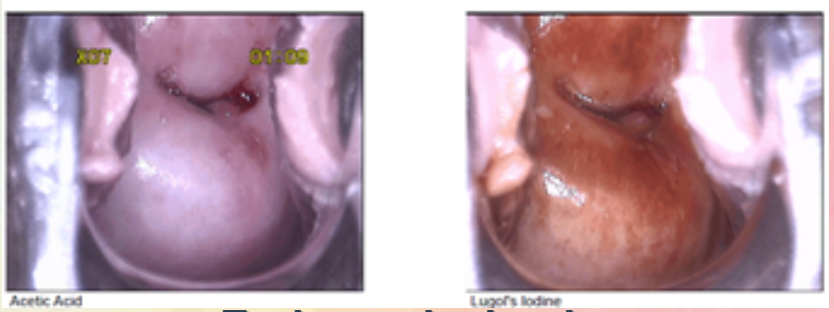
Metaplasia



Endocervical speculum examination



Trichomonas infection appearing as Leopard skin



Endocervical polyp

Grading of Colposcopy Findings

Swede Score	0	1	2
Acetowhite	Zero or transparent	Shady, milky, neither transparent nor opaque	Distinct opaque white
Margins/Surface	Diffuse	Sharp but irregular jagged, geographic satellites	Sharp, even difference in surface level, includes cuffing
Vessels	Fine, regular	Absent	Coarse or atypical
Lesion size	<5 mm	5-15 mm or 2 quadrants	>15 mm or three to four quadrants or undefined endocervically
Iodine staining	Brown	Faintly or patchy yellow	Distinct yellow
Overall Swede Score 10			

Overall swade Score 10

0, 1	Normal/Atypical HPV infection
2, 3, 4	CIN1/LSIL
5, 6, 7	CIN2/HSIL
8, 9, 10	CIN3/CIS/HSIL

Use of Swede Score to Predict Histology

Conclusion:

Treatment is done on the basis of scoring in screen and treat program. In higher score, biopsy is done to rule out microinvasive cancer.

TREATMENT OF CERVICAL INTRAEPITHELIAL LESION (CIN)

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Max Institute of Cancer Care
Max Super Specialty Hospitals, Vaishali and Patparganj
Max Multi Specialty Centre, Noida

Introduction

Cervical cancer is being targeted as an eradicable disease just like polio. Cervical cancer is a 100% preventable cancer – vaccination and screening are the key elements for the cervical cancer eradication program.

The spectrum of diagnosis of cervical cancer has shown a paradigm shift from more detection of cervical precancers and early detection of cervical cancers to lesser advanced cervical cancers.

Treatment Modalities

The treatment of Cervical Intraepithelial Neoplasia (CIN) is a destruction, limited to ablation or excision procedures targeting the entire Transformation Zone (TZ). Excision procedure provides a biopsy specimen which helps in confirmation of absence of invasive cancer and evaluates involvement of the excised margins. High grade changes might extend along crypts of glands. Treatment of high-grade CIN should extend beyond depth of 5 mm to include crypts.

Following are the treatment modalities of CIN:

1.Cryotherapy: The temperature of the cervical epithelium underlying the probe is reduced to −20°C. New mature squamous epithelium replaces the treated epithelium. A meta-analysis of 11 randomized controlled trials have shown a cure rate of 92% for CIN 2 and 85% for CIN 3 lesions after cryotherapy.

2. Thermal ablation: The equipment uses a probe that is heated to 100° C and applied to the cervix for 20–45 s to destroy the epithelium. A meta- analysis involving 4569 patients showed that cure rate was 94% of CIN 1–3 lesions.

3. Loop electrosurgical excision procedure (LEEP): From meta-analysis and systematic review of RCT study, treatment with LEEP was associated with a significantly lower risk of persistence disease at 6 months and recurrent disease at 12 months compared to ablation.

4. Cold knife conization (CKC): Cone biopsy or conization is excisional method of taking a cone of cervical tissue consisting of transformation zone and a part of endocervical canal. It can be diagnostic or therapeutic. This method is generally reserved for treating adenocarcinoma in-situ (AIS) and microinvasive carcinoma. Conization can be done with a scalpel (cold knife conization – (CKC), LASER, or with electrocautery (needle cautery or LEEP). In women with glandular abnormalities or suspicion of invasive cancer, CKC is preferred. Thermal damage sometimes seen at margins of LEEP specimen is avoided.

Indications of Diagnostic Conization

1. When there is discrepancy between high grade cytology and histopathology (two grades less severe)

2. CIN with positive endocervical curettings

3. Type 3 TZ on colposcopy with unexplained atypical glandular cells/high-grade cytology, upper limit of lesion is extending into endocervical canal, Microinvasive cancer & Adenocarcinoma in situ to rule out frank invasion

Therapeutic Conization is done for the following lesions:

CIN2/3, AIS, & Stage A1 squamous cell carcinoma if patient wants to preserve fertility

Young women who develop CIN may desire future fertility. A large part of low-grade Cin and some high-grade CIN spontaneously regress. Only a small fraction of CIN progress to cervical cancer. A risk assessment of progression to cervical cancer should be done to decide the treatment plan. Compliance of women seeking treatment must be considered along with the morbidity of treatment. CIN1 is a low-grade lesion with least potential for progression to malignancy and highest potential for regression (57% regression, 32% persistence and 1% progression to cancer at 24 months). CIN 2, 3 has a higher potential for progression and a lower potential for regression (43–32% regression, 35–56% persistence and 1.5%–12% progression to cancer at 24 months).

Treatment Approach for CIN 1

Young women with CIN 1 can be observed. Yearly cytology for 2 consecutive years is recommended for lesions preceded by LSIL or less. If cytology shows ≥ ASCUS, colposcopy should be performed. Yearly cytology and colposcopy is recommended for lesions preceded by ASC-H or HSIL if the entire squamo-columnar junction and lesion are visible.

Treatment Approach for CIN2/3

Observation may be preferred in selected cases of CIN 2/3. These women are followed at 6 and 12 months with cytology and colposcopy. Excision procedure may lead to adverse obstetric outcomes such as cervical incompetence and preterm deliveries. Ablation is preferred over excision in women desirous of future conception. Ablation does not provide pathologic specimen and hence is recommended for small lesions well characterized histologically and colposcopically. No woman with CIN 3 is denied treatment. Excisional procedures are preferred over ablative procedures in CIN3. Simple or partial trachelectomy can be considered as an effective and safe method in cases of persistent or recurrent high-grade CIN who hope to preserve their uteri.

Take Home Messages

Careful selection of treatment approach must involve colposcopy findings, grade of CIN, patient's age and desire of future conception. Ablative and excision procedures depend on these factors. Early detection is the cornerstone of management of precancerous cervical lesions.

Few Cervical cancer prevention and vaccination awareness activities done recently by DGF

1-20/8/24 DGFS(Delhi Gyne Forum-South)
2-15/8/24 DGF-(Delhi Gyne Forum-North)
3-14/9/24-Noida
4-22/6/24-Telangana
5-18/9/24- DGF- Delhi Gyne Forum Dwarka

QUIZ

1- Cervical cancer screening should be done after ?
A-21 yrs
B-30 yrs
C-Once a person is sexual active
d-Whenever you want

2.Pap's smear frequency should be
A-3 yearly
B-4 yearly
C-5 yearly
D- Whenever you are free

3.Gardacil-4 is recommended in males at what age
A-9 to 15.
B-9 to 26
C-15-26
D-not recommended

4.How does the HPV vaccine help in preventing cervical cancer?
A- it kills cancer cells
B- It prevents infection from high risk HPV strains
C- it boosts the immune system
D- it blocks all forms of STD

5.What is the recommended screening method for women aged 30 to 65
A-PAP smear every 3 years
B-HPV test every 5 years
C- Co testing (PAP & HPV test) every 5 years
D- No screening required
E- Any of above ABC

6. A 20year old girl desires HPV vaccination. After counselling which vaccination would you recommend?
A- Inj Gardasil 4
B- Inj Gardasil 9
C- Inj Cervavac
D-1&2 only
E- All 1,2&3

7. A 27 yrs old Lactating woman can be given the following HPV vaccination
A- Inj Gardasil 4
B- Inj Cervavac
C- Inj Gardasil 9
D- Any one

8. A 35 yr old woman is HPV positive on Co-testing.(Pap +HPV test).
A- You will still advise her for HPV vaccination as it will protect her from other sub types.
B- Not advise on HPV vaccination.
C- You will give her the vaccination because it will remove the HPV virus.

9. A 40 yr old married woman wants advise on cervical cancer protection. She has not received the HPV vaccination.
A -You will give her Quadrivalent HPV vaccine .
B- You will give her Nona valent vaccine.
C- Will give quadrivalent gardasil vaccine and take a Pap -Smear + HPV Co-test.
D- Will do Pap –Test

10. Pap smear shows HPV related changes
A- Do immediate colposcopy
B- Repeat after 6 months
C- Do HPV DNA PCR testing
D- Vaccinate her and repeat after 6 Months

11. What are contraindications for HPV vaccination
A- Pregnancy
B- Lactation
C- Patient taking infertility treatment
D- Immunocompromised patients

Answers

1. B & C
2. A
3. D
4. B
5. E
6. E
7. A
8. A
9. C
10. D
11. A