

HORMONAL VAGINAL RING (NUVARING)

Dear Readers,

Season's Greetings !

Human Papilloma virus infection is a known precursor of cervical cancers in India. With introduction of HPV vaccine the incidence of cervical cancers is expected to go down. The article on HPV vaccines gives a detailed account about the vaccine, the types and efficacy.

Rights based approach towards sexual and reproductive health service delivery , apart from other responsibilities, also puts us in the need to update ourselves constantly. Nuvaring is a new combined contraceptive in the Indian markets. The article on Nuvaring gives primary information about Lastly, there is a small quiz on Abortion. I expect answers to the quiz on medical@fpaindia.org.

I hope this you find this issue of Medpulse useful in updating your knowledge.

Your feedbacks and suggestions are always welcome.

Happy Reading !

Inside This Issue

- Hormonal Vaginal Ring
- Human Papilloma Virus infection and HPV vaccine
- Quiz on Abortion

▶ Etonogestrel/ethinyl estradiol vaginal ring is a nonbiodegradable, flexible, transparent, colorless to almost colorless, combination contraceptive vaginal ring containing two active components, a progestin, etonogestrel and an estrogen, ethinyl estradiol .

▶ When placed in the vagina, each ring releases on average 0.120 mg/day of etonogestrel and 0.015 mg/day of ethinyl estradiol over a three-week period of use.

▶ It has an outer diameter of 54 mm and a cross-sectional diameter of 4 mm.

▶ It is approved by Drug Controller General of India as a contraceptive.



▶

▶ Effectiveness rates in clinical trials of the vaginal ring suggest that it may be more effective than combined oral contraceptives, both as commonly used and with consistent and correct use'

▶ There is no delay in return of fertility after discontinuation.

▶ There is no protection against STIs

▶ How to use ?



Press it before inserting



Insertion



Removal

▶ Indications : Same as Combined oral pills

▶ Side Effects : Same as Combined oral pills , some users report vaginitis or white vaginal discharge

▶ Contraindications : Thromboembolic disorders, DVT, Cerebral vascular or coronary artery disease, VHD , Severe HT, Diabetes with vascular involvement Headaches with focal neurological symptoms Major surgery with prolonged immobilization ,Known or suspected CA breast or H/o breast cancer Carcinoma of the endometrium or other known or suspected estrogen-dependent neoplasia ,Undiagnosed abnormal genital bleeding ,Jaundice with prior hormonal contraceptive use ,Hepatic tumors (benign or malignant) Known or suspected pregnancy ,Heavy smoking (≥15 cigarettes per day) and over age 35 ,Hypersensitivity to any of the components of NuvaRing.

(Continued on page four)

HUMAN PAPILLOMA VIRUS AND HPV VACCINE

What is HPV?

Papillomaviruses are DNA tumor viruses that are widely distributed throughout animal species; these viruses are species specific. The papilloma virus that infects humans is called human papillomavirus, or HPV. HPV commonly causes epithelial proliferations at cutaneous and mucosal surfaces called as genital HPV infections. persistent genital infection with certain viral genotypes can lead to the development of anogenital precancers and cancers.

Types of HPV

There are more than 100 different types of HPV. They are categorized as follows;

High-risk types cause most anogenital cancers. HPV 16 and 18 are two types of high-risk HPV associated with about 70% of all cases of cervical cancer. HPV 16 is the most common high-risk type, found in almost half of all cervical cancers. It is also one of the most common types found in women without cancer. HPV 18 is another common high-risk virus, found not only in squamous lesions but also in glandular lesions of the cervix. HPV 18 accounts for 10% to 12% of cervical cancers. At least 11 other HPV types are also high risk. Among these, HPV 45 and 31 account for about 4% of cases each.

Low-risk types cause genital warts, abnormal cervical cytology, recurrent respiratory papillomatosis, or, most commonly, infections that go unnoticed and eventually clear up. Common types: 6, 11, 40, 42, 43,44, 54, 61, 72,73, 81 . These can cause benign or low grade cervical cell changes and genital warts but are rarely, if ever, found in association with invasive cancers. HPV 6 and HPV 11 are the low-risk viruses that are most commonly found in genital warts.

The epidemiology of HPV

Genital HPV infections are primarily transmitted by sexual contact, predominantly but not exclusively through penetrative intercourse. HPVs are highly transmissible. Diseases caused by HPVs include cancers of the cervix, vagina, vulva, penis and anus; a subset of head and neck cancers; anogenital warts; and recurrent respiratory papillomatosis.

In 2005, there were about 500 000 cases of cervical cancer and 260 000 related deaths worldwide. India has a population of 366.58 million women ages 15 years and older who are at risk of developing cervical cancer. About 7.9% of women in the general population are estimated to harbor cervical HPV infection at a given time, and 82.5% of invasive cervical cancers are attributed to HPVs 16 or 18. Current estimates indicate that every year 1, 34,420 women are diagnosed with cervical cancer and 72,825 die from the disease.. Cervical cancer ranks as the 1st most frequent cancer among women in India, and the 1st most frequent cancer among women between 15 and 44years of age.

Factors Strongly Associated with Acquisition of HPV Infection in Women

- Young age (less than 25 years)
- Increasing number of sex partners
- Early age at first sexual intercourse (16 years or younger)

‣Male partner has (or has had) multiple sex partners
HPV Infection

‣Homosexual behavior both in men and women

Genital HPV Transmission

HPV is usually transmitted through direct skin-to-skin contact, most often during penetrative genital contact (vaginal or anal sex). Other types of genital contact in the absence of penetration (oral-genital, manual-genital, and genital-genital contact) can lead to HPV infection, Very rarely, genital HPV infections can be transmitted from mother to baby during delivery. Perinatally transmitted infections with low-risk HPV types can result in respiratory tract warts in children, a condition known as recurrent respiratory papillomatosis (RRP).

Immunology, pathology and diagnosis

HPV infections are restricted to the intraepithelial layer of the mucosa and do not induce a vigorous immune response. Approximately half of all women infected with HPV develop detectable serum antibodies, but these antibodies do not necessarily protect against subsequent infection by the same HPV type. The median time from infection to seroconversion is approximately 8–12 months, although immunological response varies by individual and HPV type.

Persistent HPV infection may lead to cervical intraepithelial neoplasia (CIN) of moderate (2) grade or severe (3) grade or to adenocarcinoma in situ (AIS), a precancerous lesion involving cervical glandular cells. If untreated, CIN2–3 has a high probability of progressing to squamous cell cancer, and AIS has a high probability of progressing to adenocarcinoma. The time between initial HPV infection and development of cervical cancer averages 20 years.

HPV-induced changes in the cervical epithelium can be detected by Papanicolaou (Pap) test. Persistent HPV infection can be diagnosed by repeated tests for HPV DNA. Cytology or testing for HPV DNA, or both, are used for cervical cancer screening and diagnostic follow-up in many countries. In low-resource settings that lack a complex health infrastructure, visual inspection of the cervix with acetic acid or Lugol's iodine is used to identify cervical lesions, which can be immediately treated by cryotherapy.

Detection of Genital HPV Infection

Diagnosis of genital warts is made by visual inspection. A genital warts diagnosis may be confirmed by biopsy, although biopsy is needed only in certain circumstances. The use of HPV tests is not indicated for

the routine diagnosis or management of visible genital warts.

HPV DNA Test: Molecular tests can be used to detect HPV DNA. The only such test that is currently approved by the FDA is Digene's Hybrid Capture II® HPV Test,. The HPV DNA test detects whether one or more types of HPV are present; it does not identify individual HPV types.

There is currently no FDA approved HPV DNA test for males, nor is HPV testing of males recommended. While HPV is common in men, HPV-associated cancers are rare.

Recommended Treatment Regimens for genital warts

Patient-Applied Treatments

- Podofilox* 0.5% solution or gel
- Imiquimod* 5% cream
- Cryotherapy
- Podophyllin resin*
- Trichloroacetic Acid (TCA) or Bichloroacetic Acid (BCA)
- Surgical Removal—by tangential scissor excision, tangential shave excision, curettage, or electrosurgery.

* These treatments should not be used during pregnancy, as their safety during pregnancy has not been established.

Prevention of Genital HPV Infection HPV vaccines

The advent of an HPV vaccine now offers an additional, promising method of preventing up to 70% of cervical cancer cases through primary prevention. However, regular cervical cancer screening will still be necessary for vaccinated women because: 1. The vaccine will NOT provide protection against all types of HPV that cause cervical cancer. Women may not receive the full benefits of the vaccine if they do not complete the vaccine series. 3. Women may not receive the full benefits of the vaccine if they receive the vaccine after they have already acquired a vaccine HPV type.

Currently, 2 HPV vaccines are widely marketed internationally. In June 2006, the first vaccine against HPV infection was approved and marketed—Merck & Co. Inc.'s Gardasil.® Since that time, Gardasil and the GlaxoSmithKline vaccine, Cervarix,® have been licensed in more than 100 countries worldwide. In India, both the vaccines are licensed by the Indian Government and are available in the market in India

The Federation of Obstetric and Gynaecological Societies of India (FOGSI) and the Indian Academy of Pediatrics (IAP) recommend HPV vaccine, as does the World Health Organization (WHO). PATH is conducting vaccine trial in two states Gujrat and Andhra Pradesh.

Safety and side effects

The WHO position paper on HPV vaccines states that, “in clinical trials, mild and transient local reactions at the site of injection (erythema, pain, or swelling) were 10–20% more frequent among those who received the current HPV vaccines than in their respective control groups, but no systemic adverse reactions assessed to be causally associated with the HPV immunization have been reported.” Some have expressed concern about safety of HPV vaccines being tested. Of the more than 23,000 girls vaccinated in India, three were hospitalized after vaccination as a cautionary measure. All three were released soon afterward, following observation.

Points to remember about Vaccination

- ▶ Regular cervical cancer screening is needed after vaccination as the vaccine will not provide protection against all types of HPV that cause cervical cancers cer.
- ▶ Protective sexual behaviors should be practiced (e.g., abstinence, monogamy, limiting their number of sex partners, and using condoms), as the vaccine will not prevent all cases of genital warts—nor will it prevent other STIs.
- ▶ Full benefits of the vaccine may not be received after a woman has become sexually active (and may have acquired a vaccine HPV type) or if they do not complete the full cycle of vaccines.

| | Gardasil (Merck) | Cervarix (GSK) |
|-----------------------|---|---|
| Type | Quadrivalent | Bivalent |
| Manufacturing process | Made in yeast | Made in Baculovirus |
| Adjuvant | Aluminium adjuvant | ASO4 (Alum and MPL adjuvant) |
| Schedule | 0---2----6 month schedule | 0---1----6 month schedule |
| Dose | 0.5 ml injection volume | 0.5 ml injection volume |
| Booster | Not necessary | Not Necessary |
| Efficacy | 99% efficacy against developing precancerous lesions | 93% efficacy against developing precancerous lesions |
| Storage | 2–8 °C and not frozen | 2–8 °C and not frozen |
| Protection | Duration: 8.5 years protection against HPV type 16. Protects against four HPV types (6, 11, 16, 18), which are responsible for 70% of cervical cancers and 90% of genital warts. | Duration: 7.3 years protection against HPV type 16 |
| Beneficiary | This vaccine has been licensed for use in young adolescent girls (as young as 9 years of age in some countries) to prevent cervical precancers and cancers and anogenital warts in females. | This vaccine has been licensed for use in females as young as 10 years of age to prevent cervical precancers and cancers. |
| Use in Males | Also licensed for the prevention of anogenital warts in males. | Registration for indications in males has not been sought. |
| Contraindications | Severe Allergic reaction to the contents, pregnancy | Severe Allergic reaction to the contents, pregnancy, lactation |

References :

- Human papillomavirus vaccines WHO position paper, WEEKLY EPIDEMIOLOGICAL RECORD, NO. 15, 10 APRIL 2009
- WHO/ICO Information Centre on HPV and Cervical Cancer (HPV Information Centre). Human Papillomavirus and Related Cancers in India. Summary Report 2010.
- <http://www.path.org/news/am100422-hpv-india.php>

Removal or late replacement

| | |
|---|--|
| While having sex | Ring can be removed while sex but it is not necessary. After removal, it should be rinsed with water and reinserted. |
| In case ring left out for less than three hours in any week of use, | Ring should be put back immediately after rinsing with water |
| In case it is left out for more than three hours in week 1 or 2 | Ring should be rinsed and reinserted immediately and a back up method should be used |
| In case it is left out for more than three hours in week 3 | Ring should be discarded and a new ring should be placed in vagina immediately considering it a new cycle and a back up method should be used for next seven days. |
| Waited more than 7 days before inserting a new ring, or kept ring longer than 4weeks? | A new ring should be inserted as soon as possible a back up method should be used |

- From Family Planning , A global Handbook for providers

QUIZ ON ABORTION

1. From when does human life begin?

- A . 21 days
- B. 7 days
- C. At fertilization
- D. At birth

2. At what age does the heart of a fetus begin to beat?

- A . 21 days
- B. 7 days
- C. At fertilization
- D. At birth

3. Heartbeat, brain waves and response to touch are present in an unborn child by-

- A. 2 months
- B. 3 months
- C. 4 months
- D. At birth

4. Complications of abortion include-

- A. Risk of breast cancer
- B. Infection
- C. Risk of heavy bleeding
- D. All the above

5. Majority of abortions take place between-

- A. 8-12 weeks
- B. 12-16 weeks
- C. 16-20 weeks
- D. Later than 20weeks

6. In India, medical abortion is approved in India up to

- A. 9 weeks
- B. 7 weeks
- C. 8 weeks
- D. 6 weeks

7. Women having abortions in the first or second trimester have a higher risk of breast cancer.

- A. True
- B. False

8. Abortion can have emotional side effects.

- A. True
- B. False

9. In India second trimester abortion is legal up to

- A. 24 weeks
- B. 20 weeks
- C. 26 weeks
- D. 28 weeks

10. in India, Unmarried clients cannot avail abortion services alone

- A. True
- B. False

Read more: [Quiz on Abortion | Medindia](http://www.medindia.net/medical-quiz/quiz-on-abortion.asp#ixzz1YwmCilxG) <http://www.medindia.net/medical-quiz/quiz-on-abortion.asp#ixzz1YwmCilxG>