

In the name of god

Genital wart

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Molluscum Contagiosum



acrocordones



Seborrhea cratosis



Lichen planus



Indications for treatment

The main indication for treatment is alleviation of bothersome symptoms (pruritus, bleeding, burning, tenderness, vaginal discharge, pain, obstruction of the vagina, dyspareunia) or psychologic distress

Warts do not pose serious risks to health or fertility; therefore,

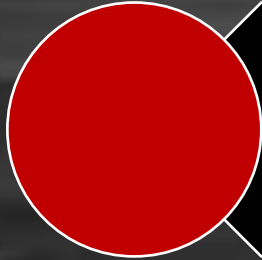
some symptomatic patients may reasonably choose expectant management to see if the warts spontaneously resolve.

spontaneous regression occurred in **up to 40 percent** of cases;

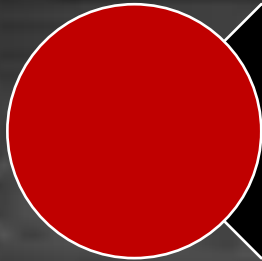
Chinese society of dermatology and venereology, China dermatologist association, Chinese association of rehabilitation dermatology and venereology. Guideline for the Clinical Management of Anogenital Warts in China (2021). *Chin J Dermatovenereol.* 2021

visible genital warts should be treated. For subclinical infections, laser, cryotherapy, topical imiquimod, (extending to 1 cm around warts) should be appropriately implemented to reduce the rate of recurrence.

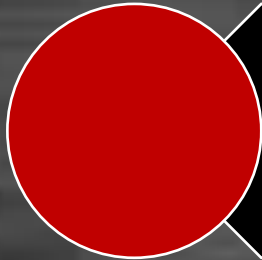
Cryotherapy, surgery, and trichloroacetic acid for genital warts are applicable to pregnant women.



There is no medical indication for treatment of asymptomatic warts incidentally noted on physical examination



There is no reason to believe that treating vulvovaginal warts will reduce a woman's future risk of cancer.



there is no evidence that eradication of warts eliminates infectivity and may transfer to partner

The likelihood of recurrence





Medical therapies are generally tried first; if the patient has not responded to the initial medical therapy **after 3 weeks** or **complete clearance 6 to 12 weeks**, a different medical therapy can be administered

Surgical therapy is typically reserved for **extensive and/or bulky lesions** and those who have **failed to respond adequately to medical** therapy.

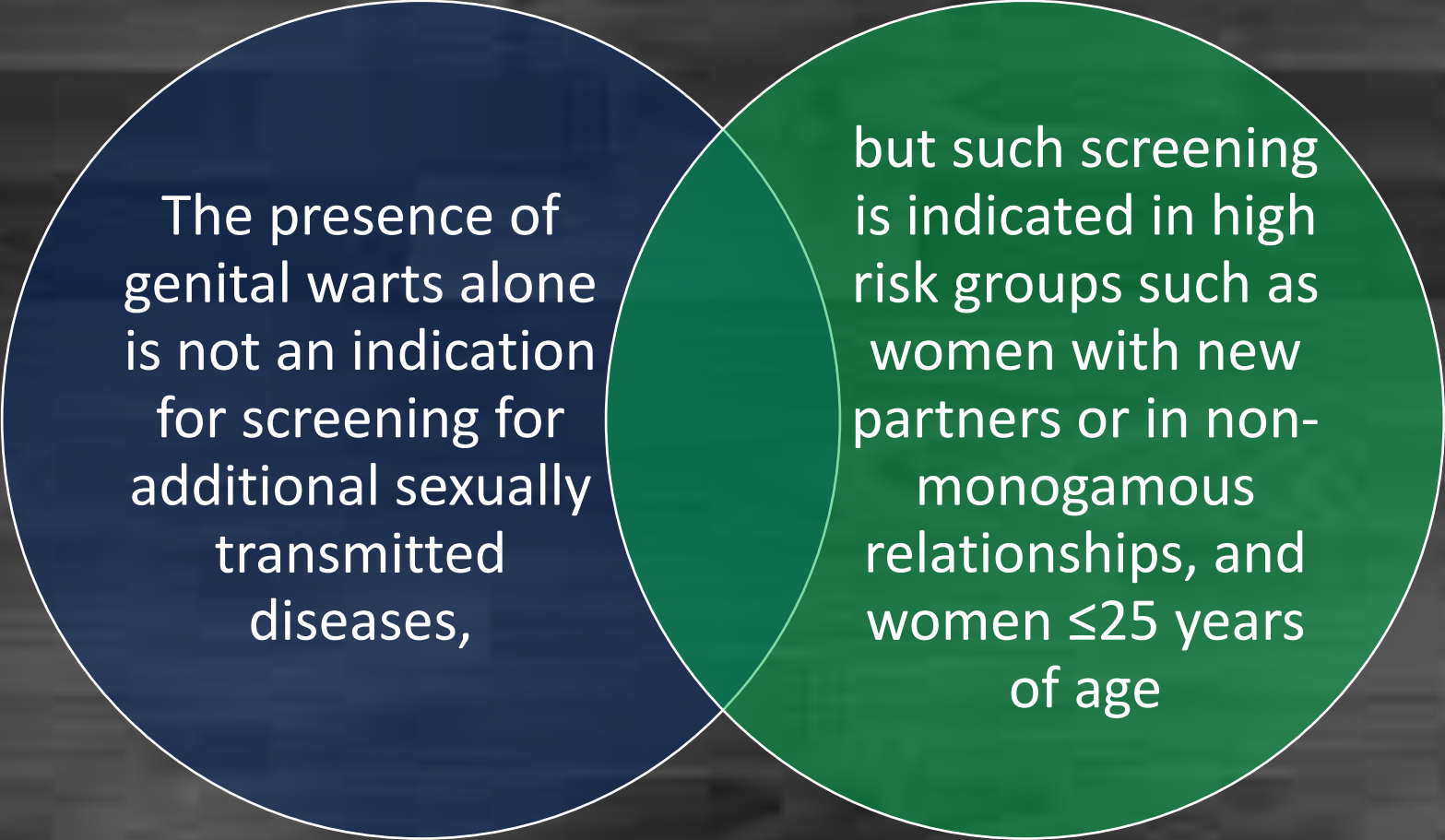
Surgery results in high initial clearance rates (90 to 100 percent),

but recurrence rates are similar to those with medical therapy

Management of sex partners

Symptomatic partners can be referred to their health care provider for evaluation and possible treatment.

asymptomatic sexual partners for oncogenic strains of HPV is not recommended



The presence of genital warts alone is not an indication for screening for additional sexually transmitted diseases,

but such screening is indicated in high risk groups such as women with new partners or in non-monogamous relationships, and women ≤ 25 years of age

Indications for pretreatment biopsy

Biopsy to rule out underlying intraepithelial neoplasia or cancer is not mandatory before initiating therapy,

The diagnosis is uncertain.

The lesion has any suspicious features, such as fixation (infiltration of dermis), irregular and unusual pigmentation (red, blue, black, brown), induration, bleeding, ulceration, or sudden recent growth.

The patient is **postmenopausal or immunocompromised**.

The lesion is refractory to medical therapy.

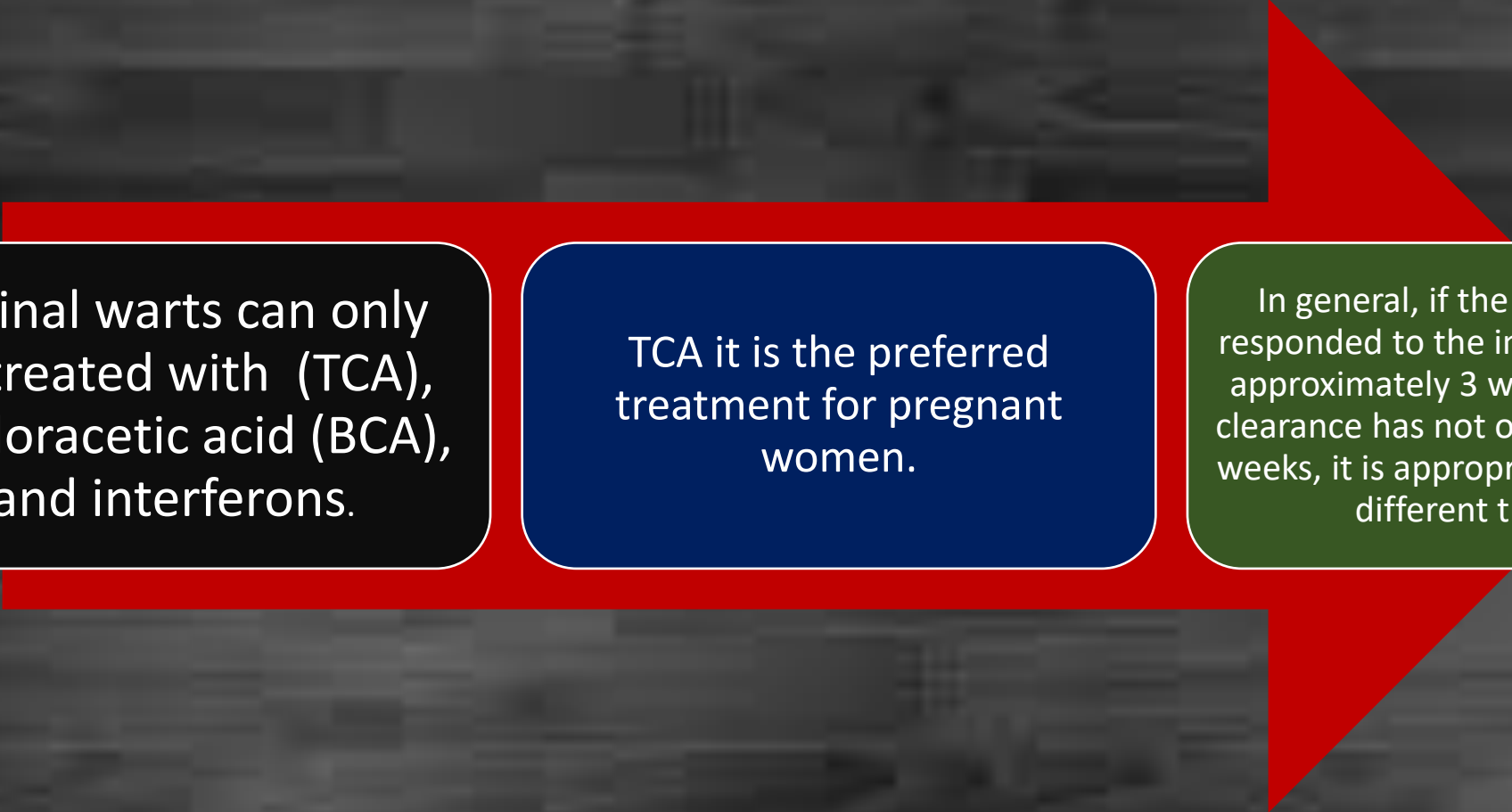
The biopsy should be obtained from **the most abnormal area and include the edge of the base of the lesion** and adjacent tissue.

TREATMENT OPTIONS

Medical therapy

1. cyto-destructive therapies
2. immune-mediated therapies.

**All medical therapies are most useful for patients with limited disease
≤5 small warts**



vaginal warts can only be treated with (TCA), bichloracetic acid (BCA), and interferons.

TCA it is the preferred treatment for pregnant women.

In general, if the patient has not responded to the initial therapy after approximately 3 weeks or complete clearance has not occurred by 6 to 12 weeks, it is appropriate to switch to a different treatment



NDC 0023-6118-03

3.5 g

Condyllox[®] Gel 0.5%
(podofilox gel)



FOR TOPICAL USE ONLY

Rx only

NDC 0591-3204-13

Podofilox
Topical Solution

0.5%

FOR TOPICAL USE ONLY

Watson

Rx only
3.5 mL



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- Podophyllotoxin ([podofilox](#))
- **twice daily** for three consecutive days She then withholds treatment for four days, and repeats this cycle **weekly up to four** times.
- Large areas (10 cm² or more) should not be treated in a single application because pain is likely when the area becomes necrotic.



Podophyllum resin

We instruct the patient to wash the area **one to four hours** after application of the drug,

otherwise excessive skin irritation and systemic absorption can occur. **The treatment is repeated weekly for four to six weeks**, or until the lesions have cleared.

Trichloroacetic acid and bichloroacetic acid —

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- It can be used on the vulva and vagina, and during pregnancy.
- Application of an ointment or gel (such as petroleum or [lidocaine](#) jelly) to the normal tissue surrounding the wart can help prevent spreading of acid to unaffected areas. The patient should not sit, stand or dress until the treatment area has dried.
- Repeated weekly application is required for four to six weeks, or until the lesions have cleared.



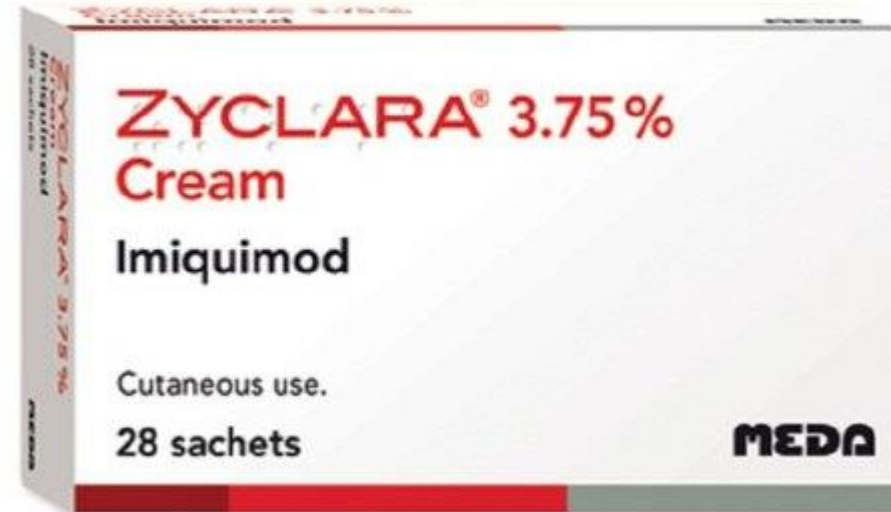
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Fluorouracil

- In the United States, the Food and Drug Administration (FDA) has not approved any formulation of FU for treatment of anogenital warts and its use is contraindicated in pregnancy.
- A disadvantage of topical FU is that it is often poorly tolerated because of burning, pain, inflammation, edema, or painful ulcerations.
- A gel consisting of FU once per week for up to six weeks.
- thin layer of 1 or 5 percent cream has been applied to vulvar or vaginal lesions to cause a chemical desquamation ranging from twice daily application to once weekly for several weeks. [Zinc oxide](#) cream or petroleum jelly can be applied to unaffected areas as a barrier to help protect against ulceration.

Immune-mediated therapies



imiquimod

- manufacturers recommend against vaginal administration
- There is insufficient information regarding the safety of use during pregnancy
- Hand washing before and after cream application is recommended. The patient applies [imiquimod](#) cream directly to the clean dry warty tissue at bedtime,
- rubbing it in until the cream is no longer visible; this area is washed with mild soap and water 6 to 10 hours later.
- Sexual contact should be avoided while the cream is on the skin.
- The cream can weaken condoms and diaphragms



Aldara is applied three days per week (eg, Monday-Wednesday-Friday) for up to 16 weeks

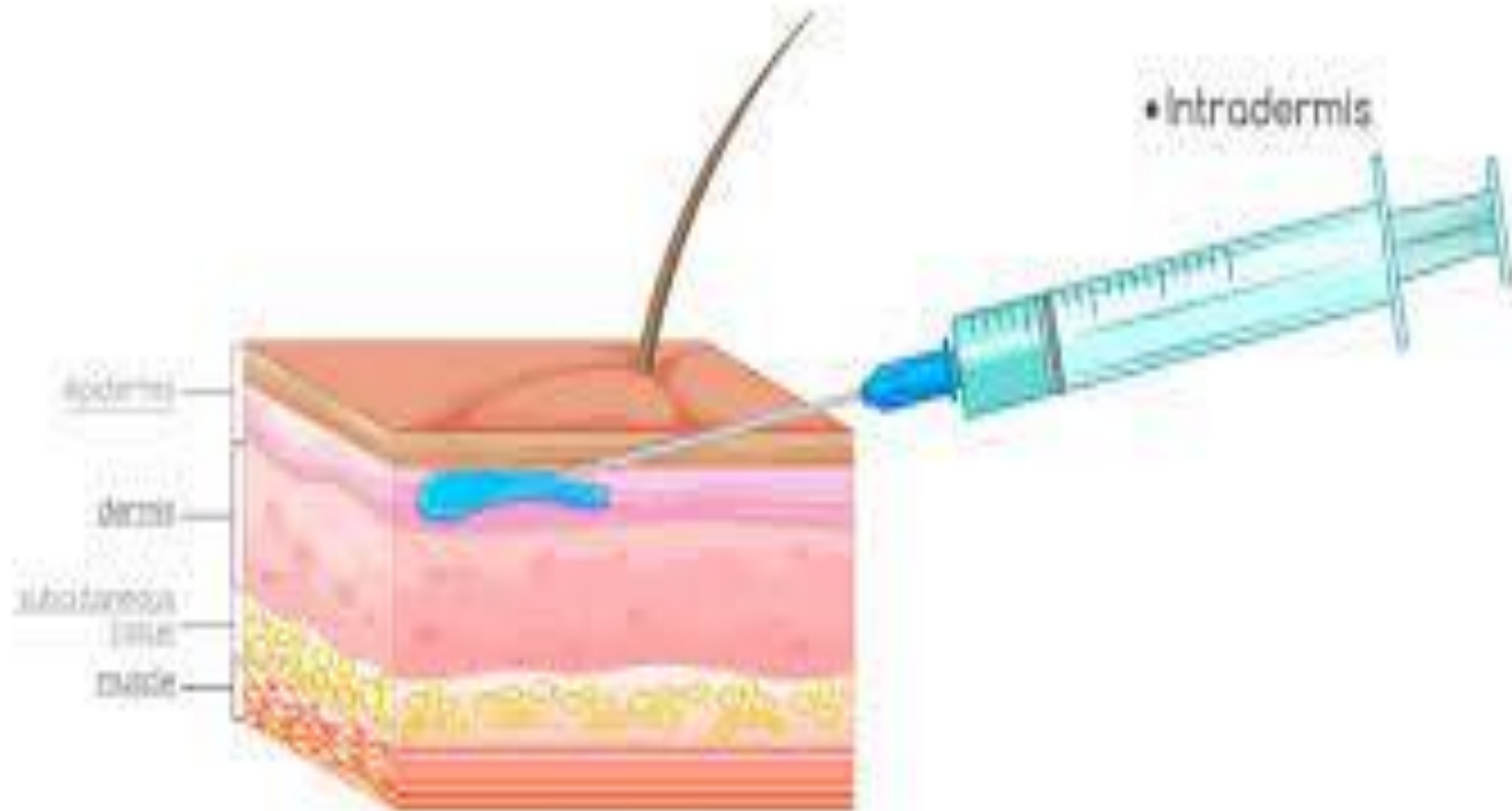
Zyclara is applied daily for up to 8

If severe inflammation occurs, use of the drug should be stopped until the inflammation clears and then it can be restarted at a lower frequency.



veregen

- A 0.5 cm strand of ointment is placed on each wart and a finger is used to cover the wart with a thin layer of the ointment 3 times each day for up to 16 weeks.
- It should not be used in the vagina or anus and should be washed off. It can weaken the latex in condoms and diaphragms.
- [Sinecatechins](#) should be avoided in **immunocompromised** women and women with active **genital herpes** lesions because safety and efficacy have not been established.
- There is minimal information on the risk of use during pregnancy.



Interferons

Intralesional injection of 0.5 to 1.5 million international units per lesion is administered two to three times per week for up to three weeks.

The course of therapy can be repeated 12 to 16 weeks from the initial treatment. Local anesthesia is recommended .

Patients receiving interferons by any route commonly experience flu-like symptoms, fatigue, anorexia, and local pain

Interferon may be used as adjunctive therapy to surgical and cyto-destructive treatments, especially in patients with refractory lesions.

Interferons are contraindicated in pregnancy

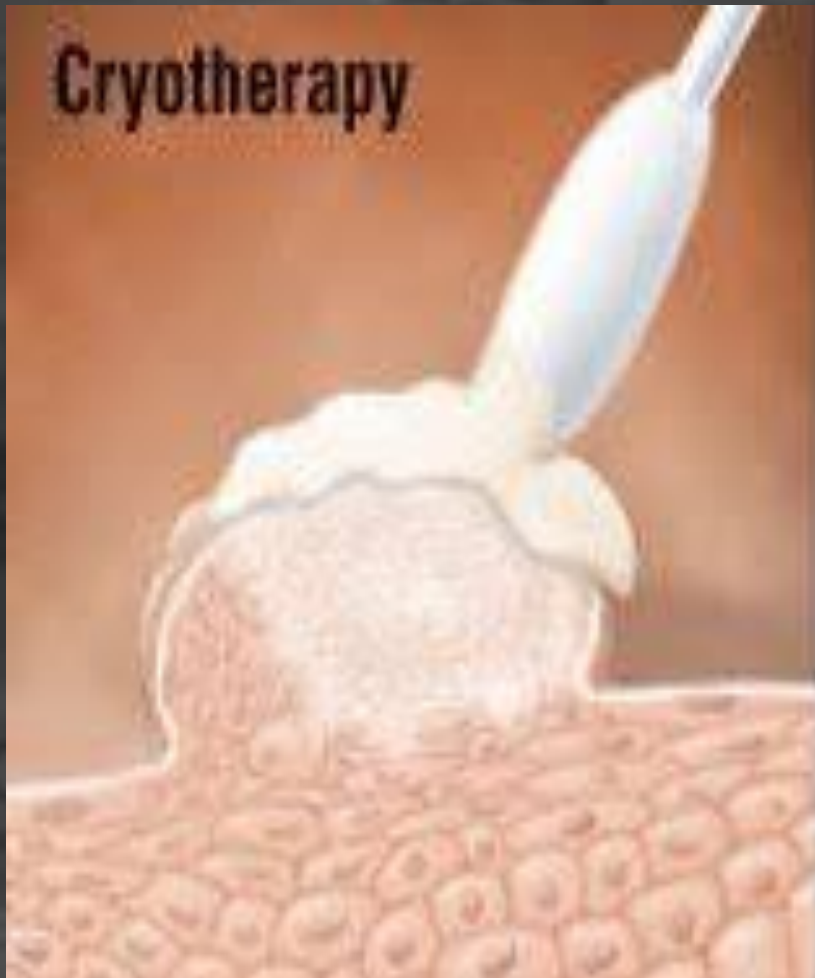
Surgical therapy

- both ablative and excisional modalities are used.
- Regardless of the method chosen, the surgeon should maintain control of the depth of tissue destruction since deep destruction of vaginal lesions theoretically could lead to fistula formation.
- An advantage of surgical management is that fewer visits for treatment are needed compared with medical therapy, although repeated procedures are sometimes necessary, especially with cryotherapy.
- A disadvantage of ablative therapies is that persistent hypo- or hyperpigmentation is not uncommon.
- A disadvantage of all surgical therapies (ablative or excisional) is that they generally require anesthesia and often need to be performed in an operating room;
- All of the surgical options can be used in pregnant women and on both the vulva and vagina.

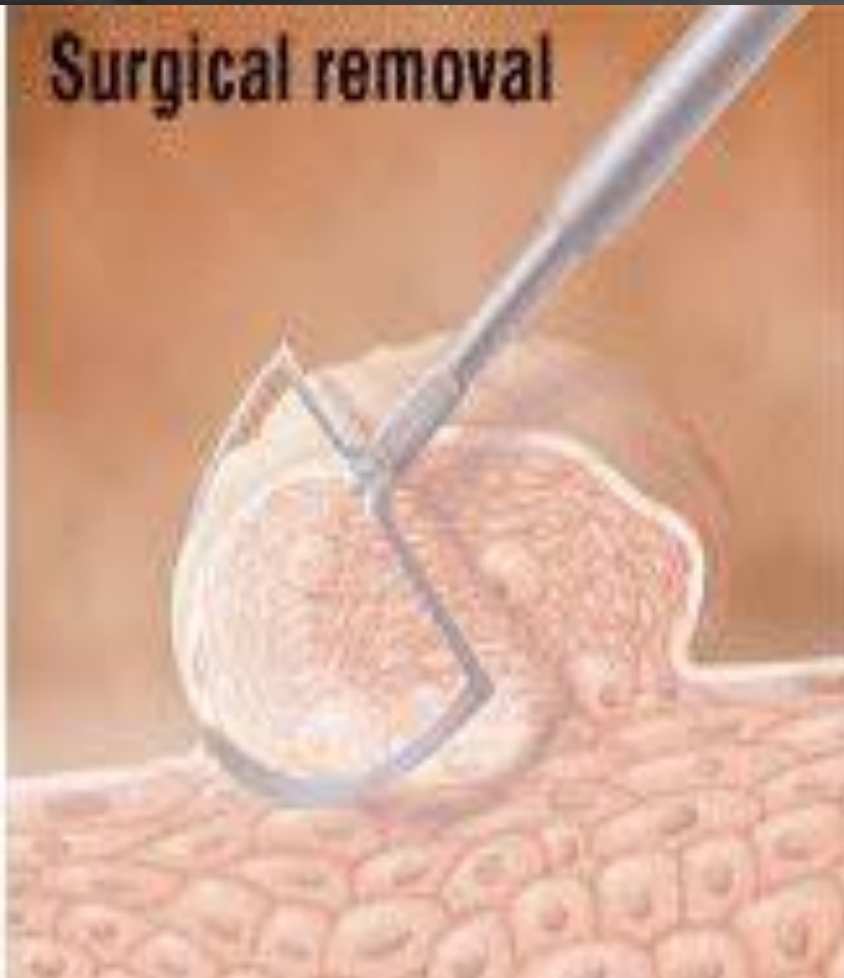
cryoablation

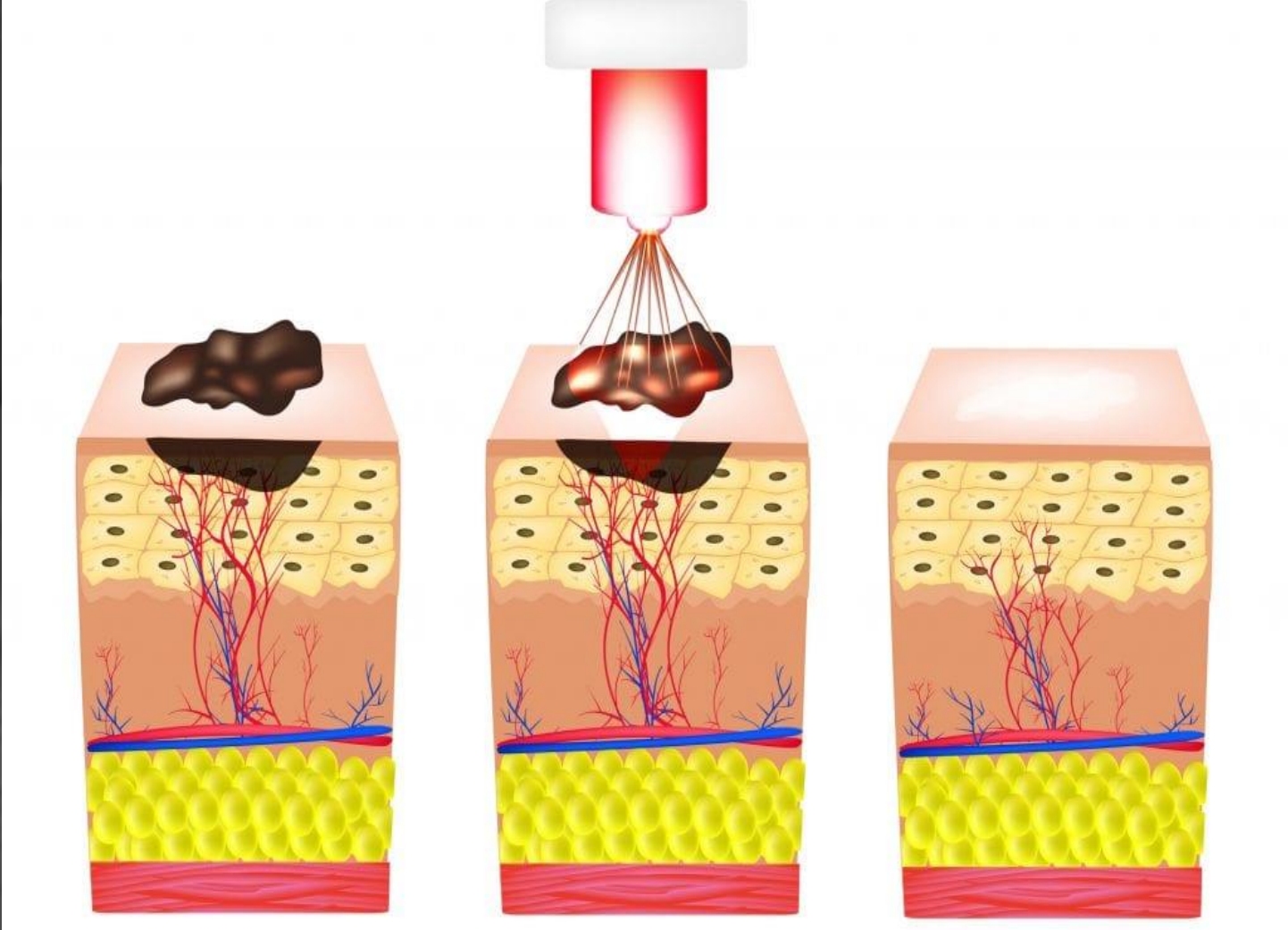
- Although it is an office procedure, cryoablation causes pain during application and variable localized inflammation afterward. Providing local anesthesia for the procedure is especially important when the area undergoing cryotherapy is extensive.
- Liquid nitrogen is most commonly used, and is applied directly to the vulvar or vaginal lesion with a cotton swab or a fine spray. The treatment is applied for 30 to 60 seconds, until an ice ball forms and encompasses the lesion and 1 to 2 mm surrounding area. Repeated weekly application is required until the lesions have resolved.
- [Nitrous oxide](#) is dispensed via a cryoprobe and generally gives a greater depth of freezing; therefore, it is not recommended for use in the vagina because of the risk of vaginal perforation and fistula formation [\[6\]](#).

Cryotherapy



Surgical removal





Laser ablation

- — ● **Benefits** – A major benefit of using laser rather than the surgical knife on the vulva is that the laser better maintains normal vulvar anatomy. Laser ablation is the preferred therapy for extensive or multifocal lesions.

is also useful for treating vaginal warts when surgical excision is technically challenging or not feasible.

- ● **Risks**

- Scar formation – Up to 28 percent of patients develop some scar formation after laser

In order to best identify tissue planes and achieve the appropriate depth of treatment, we suggest that colposcopic guidance be utilized during the laser procedure

- HPV DNA exposure

Post procedure care

- sitz baths two to three times a day during the initial one to two weeks following the procedure.
- Antibacterial creams to prevent superficial infection,
- to separate the vulvar folds and prevent agglutination of tissues. For prevention of agglutination, the patient is instructed to gently separate the vulvar folds each day during healing.



Risk of recurrence

- In one large, retrospective study of immunocompetent, non-HPV-vaccinated women, 17 percent treated with laser ablation experienced at least one recurrence at a median time of 14 weeks. Recurrence rate was associated with **younger age at treatment**, **multifocal** (versus unifocal) lesion treatment, while pregnancy was not associated with recurrence.
- For patients with multifocal or refractory disease, a combination of treatment techniques is often effective. As an example, excision is used to "debulk" the warty tissue, followed by laser ablation of the base.



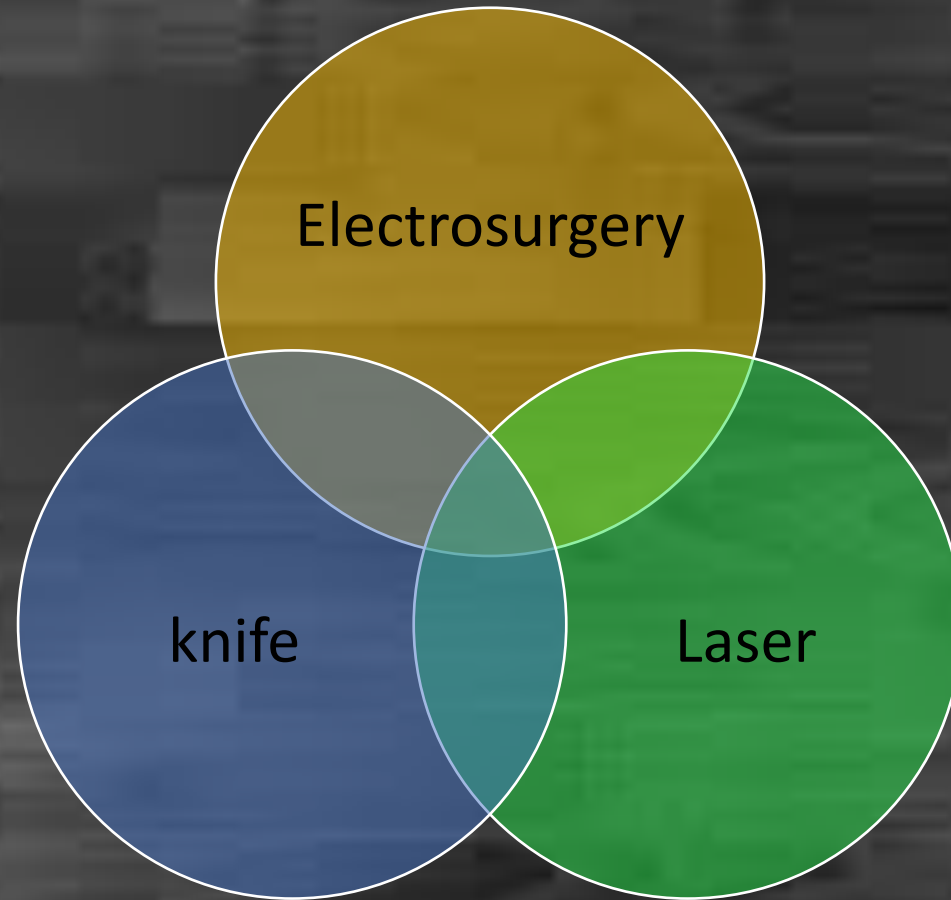
Electrocautery

Electrocautery can also be used for ablation of vulvar or vaginal lesions. An advantage of this approach over cryoablation is that a single treatment session is usually adequate for eliminating the warts

A disadvantage is that electrocautery requires administration of anesthesia and use of an operating room.

If available, laser ablation is generally preferable to electrocautery because it is associated with less bleeding and discomfort following the procedure.

Excision



Recurrent disease

For patients with recurrent disease, the **same treatment** that resulted in initial clearance of warts may be used again and is likely to be successful.

Refractory disease

For refractory disease, we suggest a surgical approach or a combination of intralesional interferon and TCA

An excisional procedure or biopsy should be performed to exclude intraepithelial neoplasia or cancer by histopathological examination.

Postmenopausal women

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should be biopsied before initiation of therapy, as these women have a greater chance of having an underlying vulvar intraepithelial neoplasia or vulvar cancer than younger women.

Pregnant women

- **Pregnant women** — Three important issues arise when anogenital warts are encountered in pregnancy:
 - Worsening of the disease in the pregnant state
 - Choice of safe and effective treatment
 - Potential vertical transmission to the fetus



should be treated to avoid complications during vaginal birth. Treatment may not reduce the risk of vertical transmission.

Treatment options are limited in pregnancy because podophyllin, podophyllotoxin, interferon, and FU are all contraindicated because of potential fetal harm

Isolated, but noteworthy, adverse events reported when laser therapy was used in pregnancy include preterm contractions]

Cryoablation is also considered a safe and effective treatment for use in pregnancy
We prefer to begin with TCA treatment because it has fewer side effects than cryoablation.

Involvement of the clitoris

We treat warts on the clitoris with the same therapies used on vulva warts. Surgical procedures on the clitoris should be performed by clinicians with experience operating in this sensitive area.

Sexual activity

- Sexual activity may be resumed when the patient feels comfortable and after any operative sites have healed, but this may take several weeks. There is some indirect evidence that use of condoms may accelerate disease resolution when both partners have type-concordant human papillomavirus (HPV) infection

Treatment

- For nonpregnant women with limited vulvar disease who can comply with self-therapy at home, we suggest [imiquimod](#) over podophyllotoxin as initial medical treatment

- For nonpregnant women with limited vulvar disease who cannot comply with self-therapy or fail self-therapy, we suggest treatment with [trichloroacetic acid](#) (TCA) rather than

- For nonpregnant women with limited vulvar disease that does not clear with monotherapy, we suggest treatment with [imiquimod](#) in combination with TCA

For nonpregnant women with limited vaginal disease, we suggest TCA for initial medical therapy. Laser ablation is our preferred surgical approach as it is possible to reach into the vagina and the depth of treatment can be controlled.

According to the WHO



cervical cancer is the second most common cancer in women living in less developed regions with an estimated **570000 cases and 311000 deaths in 2018**, and more than 85% of these deaths occurring in less developed region

comprehensive cervical cancer control

primary prevention (vaccination)

secondary prevention (screening and treatment of precancerous lesions)

tertiary prevention (diagnosis and treatment of invasive cervical cancer) and palliative care

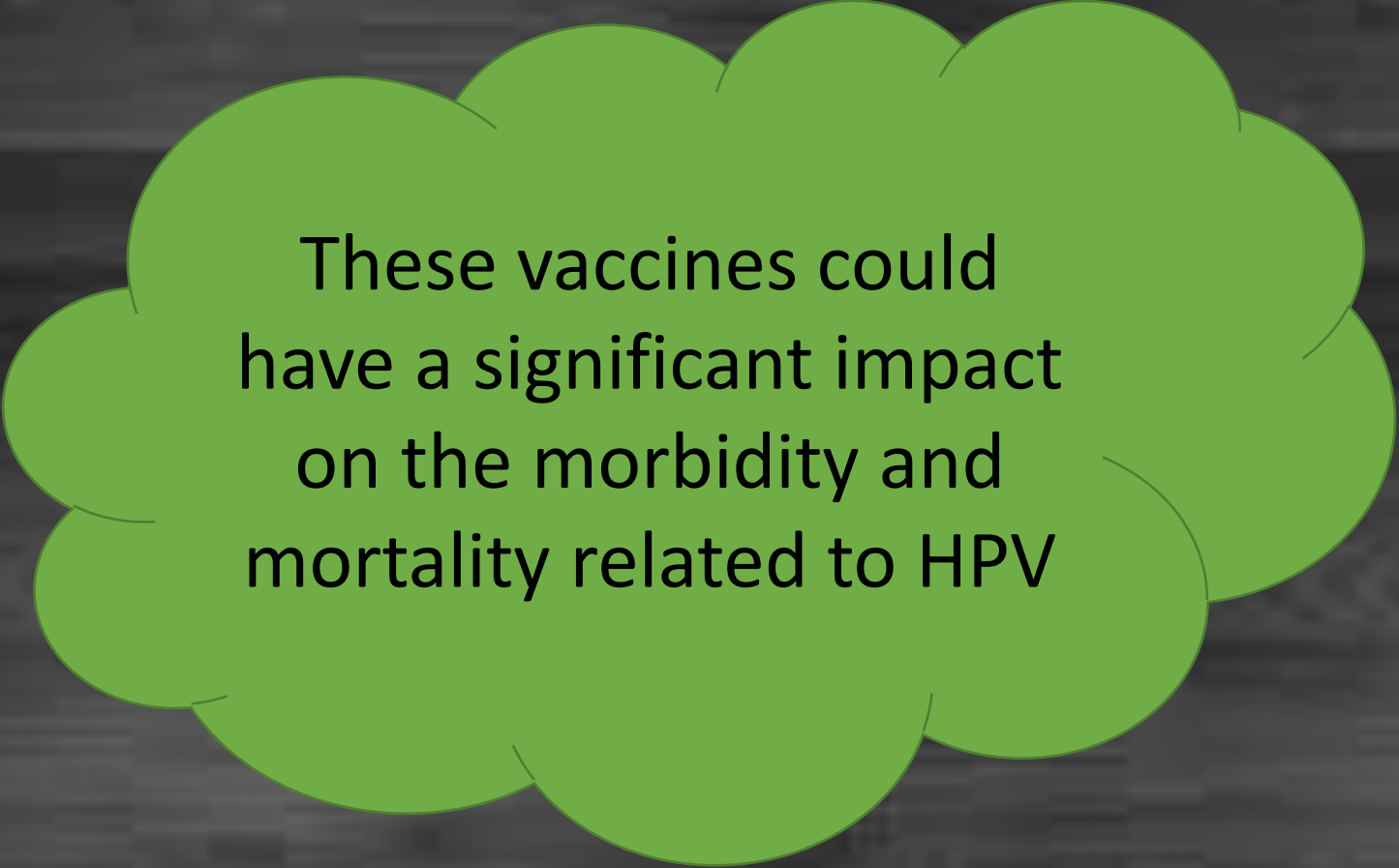
Screening the primary prevention through vaccination allow reducing the incidence of HPV-related disease and death effectively

Three types of prophylactic vaccines

- quadrivalent HPV vaccine,
- bivalent HPV vaccine
- nonavalent HPV vaccine



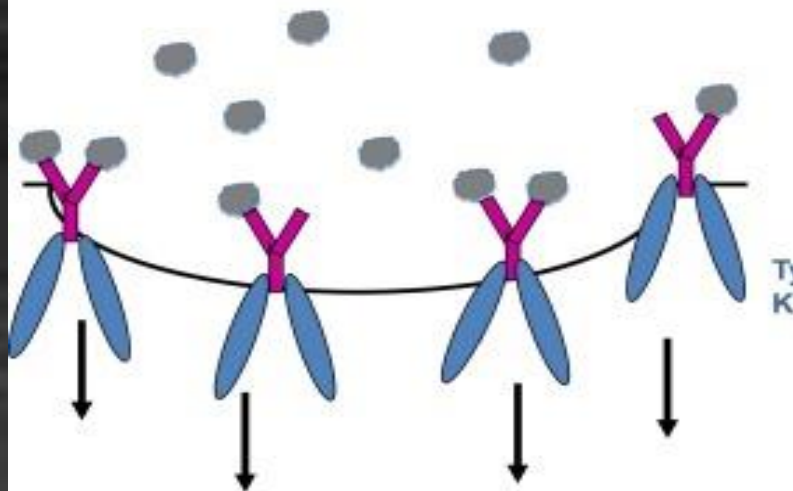
These three vaccines prevent **70%–90% of the HPV-related cancers** and reveal safety and effectiveness in randomized trials



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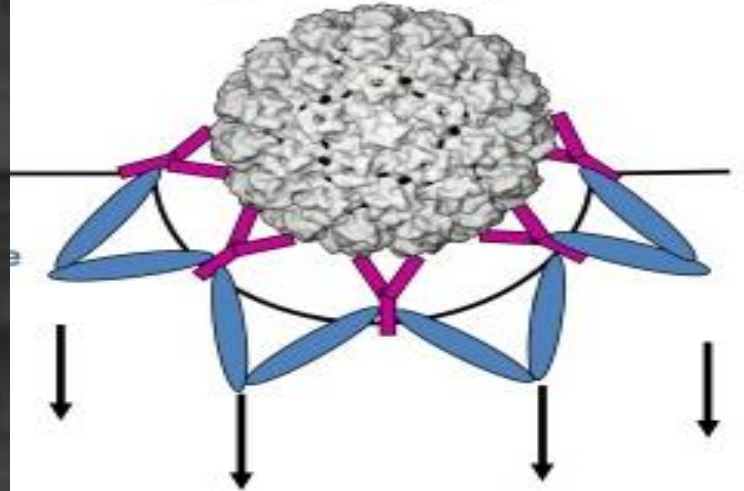
These vaccines could
have a significant impact
on the morbidity and
mortality related to HPV

BCR/ Simple Protein Complexes

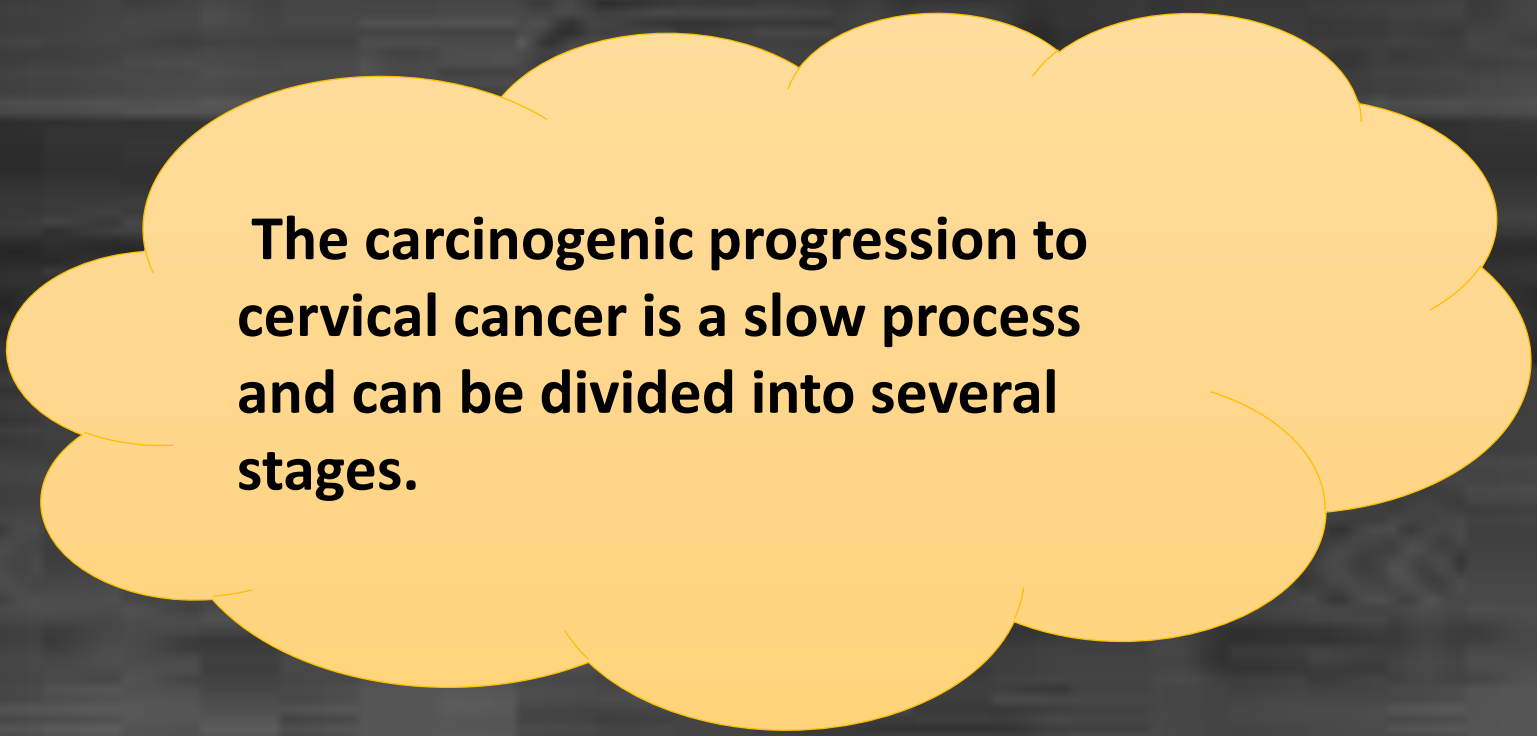


Weak Activation Signals
Low Level Antibodies
Short duration

Oligomerization of BCR/VLP Signaling Complexes



Strong Survival/Proliferation Signals
High Level Antibodies
Long Duration

A yellow, cloud-like shape with a thin black outline, centered on a dark gray background. The shape has several rounded, overlapping lobes. Inside the cloud, there is a block of text in a bold, black, sans-serif font.

The carcinogenic progression to cervical cancer is a slow process and can be divided into several stages.

Approximately 90% of patients with HPV infection present an viral clearance within a few months after viral infection



10% of the patients have a persistent infection



an increased risk of cancer in about 1% of all patients

Individuals who are sexually active should still be vaccinated consistent with **age-specific recommendations**.



A history of an abnormal Pap test, genital warts, or HPV infection is **NOT a contraindication** to HPV immunization. However, immunization is less beneficial for those who have already been infected

WHO:

vaccination programs be females aged 9 to 14 years and that local public health programs should recommend vaccination of older females only if :

affordable

cost effective

does not divert resources from vaccinating the primary target population or screening for cervical cancer

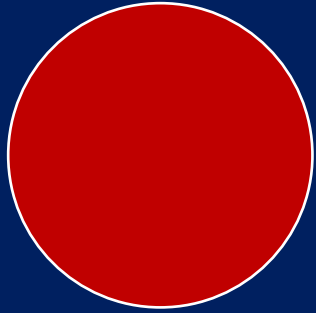
ASCO recommendations for resource-limited settings are similar

Choice of vaccine

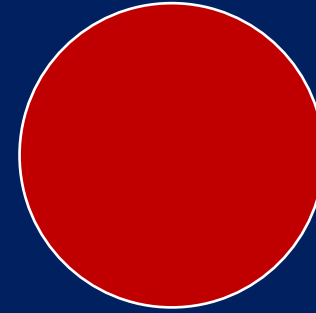
in general, the same formulation should be used to complete the series, if possible. However, if the HPV vaccine formulation initially used is unknown or unavailable, a different HPV vaccine formulation can be used to complete the series

Missed doses

The ACIP recommends that if the vaccination series is interrupted for any length of time, it can be resumed without restarting the series.



Individuals initiating the vaccine series before 15 years of age – Two doses of HPV vaccine should be given at 0 and • at 6 to 12 months.



Individuals initiating the vaccine series at 15 years of age or older Three doses of HPV vaccine should be given at 0, 1 to 2 (typically 2), and 6 months.



Unnecessary evaluation

- **Prevaccination assessment** — Serologic or HPV DNA testing is not warranted prior to immunization
- Pregnancy testing is also not necessary.
- **Postvaccination serology** — There is no evidence of postvaccination antibody titers to monitor immunity infection by the vaccine-targeted types.

Limited benefit of revaccination — there is no evidence that •
revaccination is necessary

- Recent studies have shown that a [single dose](#) of 4vHPV vaccine or 2vHPV vaccine provide protection against persistent HPV infection similar to the 3-dose regimen.

*R. Sankaranarayanan, P.R. Prabhu, M. Pawlita,
**immunogenicity and HPV infection after one, two, and three doses of
quadrivalent HPV vaccine in girls in India: a multicentre prospective
cohort study***

Lancet Oncol., 17 (2016), pp. 67-77

Pre-existing HPV-associated disease

- A history of genital warts, a positive HPV test result, or abnormal cervical, vaginal, vulvar, or anal cytology all indicate a prior HPV infection
- but not necessarily with the HPV types included in the vaccines. Vaccination is still recommended in individuals within the recommended age range who have evidence of prior HPV
- vaccination will have no therapeutic effect on pre-existing HPV infection or HPV-associated disease, and the potential benefit of HPVvaccination is not as great as if they were vaccinated before their sexual debut.

Contraindications

- Hypersensitivity
- Acetaminophen: May diminish the therapeutic effect of Vaccines.
Management: Consider avoiding routine prophylactic use of acetaminophen before or during vaccine administration when possible. Acetaminophen is still recommended to treat fevers and/or pain that occurs after vaccination

