



UICC HPV and CERVICAL CANCER CURRICULUM

Chapter 6.a.

Methods of treatment - Cryotherapy

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Cryotherapy (1)

- Simple, effective and safe outpatient ablative treatment method for the treatment of cervical intraepithelial neoplasia (CIN) in the ectocervix
- Generally used when the CIN occupies 75% or less of cervical transformation zone
- Can be carried out by a wide range of health care providers such as doctors, nurses, midwives and primary care workers under medical supervision

Cryotherapy (2)

- Safe procedure with very few complications
- Works by crystallizing the intracellular water
- Frozen cervical tissue may reach temperatures:
 - N₂O : -89°C
 - CO₂ : -68°C
- Temperature at edges of frozen cervical tissue: -20°C

Indications

- CIN 1-3 lesions
- Acetowhite or mustard yellow lesions (in “see or test and treat” situation)
- The lesion can be adequately covered by the cryoprobe or extends < 2 mm beyond the diameter of the cryoprobe
- The lesion is not cancer
- The lesion is entirely located in the ectocervix
- The lesion does not extend to vagina or endocervix
- Lesion involves $< 75\%$ of the transformation zone of the cervix

Instruments and equipment

- Examination table
- Halogen focus lamp
- Bivalved speculum
- Instrument tray
- Cryotherapy unit

Pre-cryotherapy history

- Check for
 - History of anaphylactic reactions for drugs, diabetes, hypertension, renal failure, bleeding disorder
 - History of repeated pelvic inflammatory disease
 - Pregnancy
 - Menstrual periods

Contra-indications

- Menstrual period
- Uncontrolled hypertension / diabetes mellitus
- High fever from any cause
- Severe cervical inflammatory disease
- Uncontrolled bleeding disorders
- Pregnancy

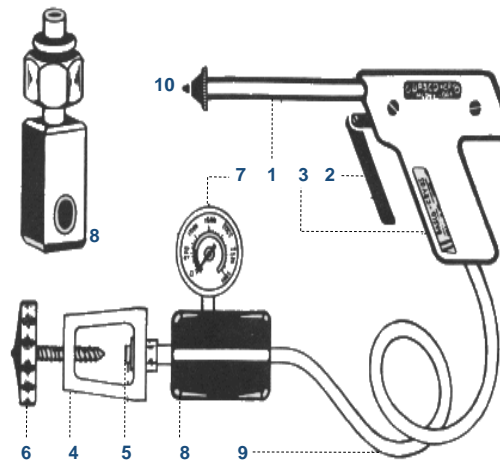
Cryotherapy unit



Cryoprobes, cryogun, pressure gauge, stop watch



Cryotherapy equipment



1. Probe
2. Trigger
3. Handle grip
4. Yoke
5. Inlet of gas from cylinder
6. Tightening knob
7. Pressure gauge showing cylinder pressure
8. Silencer (outlet)
9. Gas conveying tube
10. Probe tip

Cryotherapy equipment components



Cryotherapy unit connected to large gas cylinder (covered with clean cloth), safely placed on moveable carrier

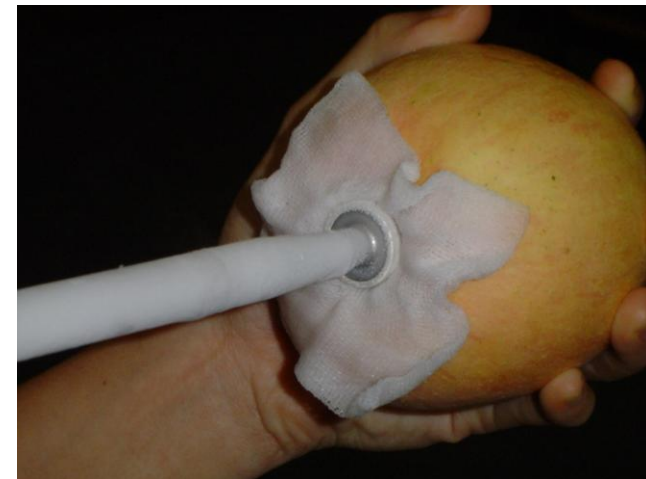
Cryotherapy procedure (1)

- Woman in modified lithotomy position
- Insert speculum, expose cervix
- Remove discharge, apply acetic acid
- Apply Lugol's iodine, wipe tip of cryoprobe with saline and apply cryoprobe in the cervix
- Set timer
- Freeze for 3 minutes
- Wait 5 minutes after first freeze
- Repeat freezing for 3 minutes

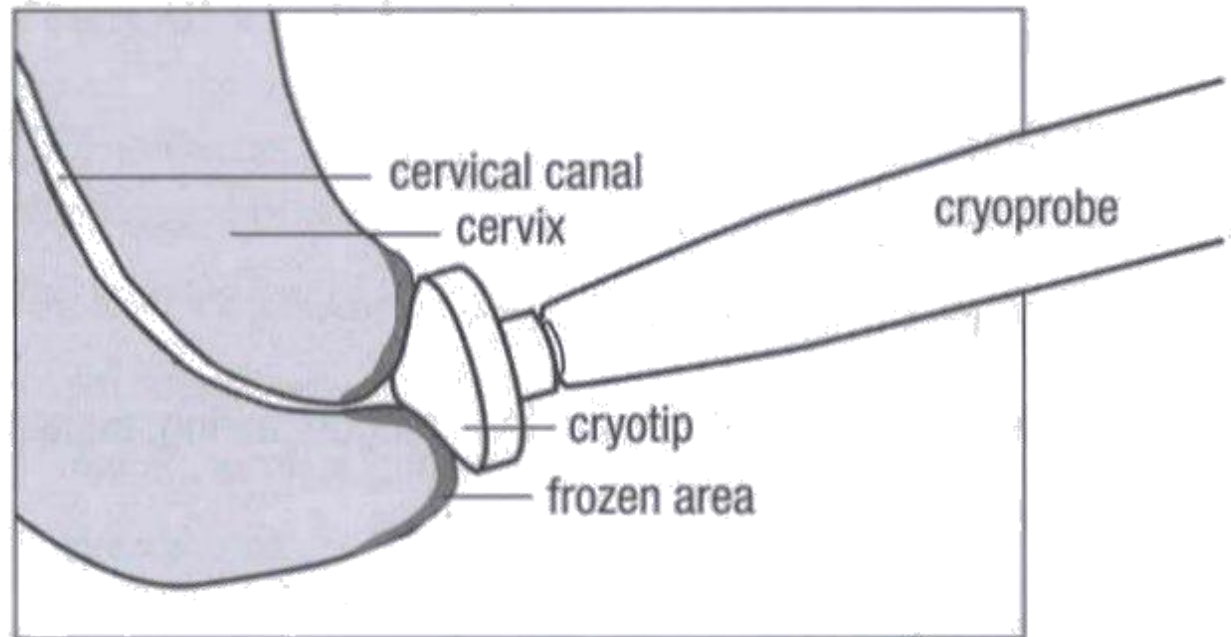
Cryotherapy procedure (2)

- Wait for cryoprobe to defrost and remove the probe
- Inspect cervix for bleeding
- Remove speculum
- Reassure the woman
- Advise follow-up care
 - no douche, vaginal tampons, or sexual intercourse for 4 weeks
 - mild cramping and clear watery discharge possible up to 4 weeks
 - routine antibiotics: metronidazole 400 mg BD X 5 days or doxycycline 100 mg BD X 5 days

Training

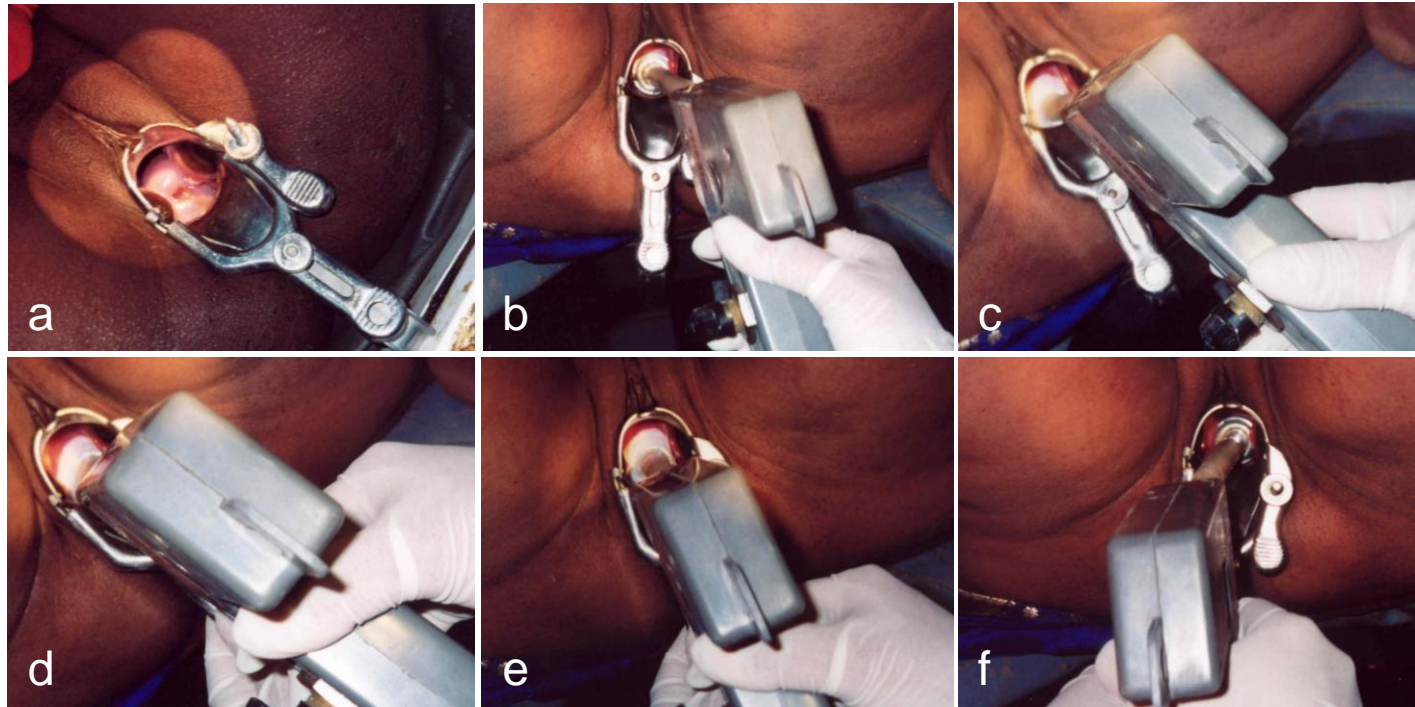


Position of the cryoprobe



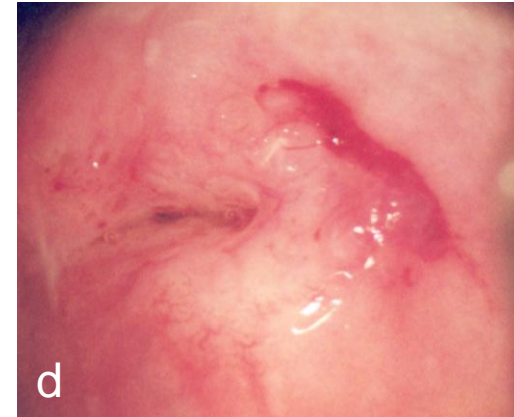
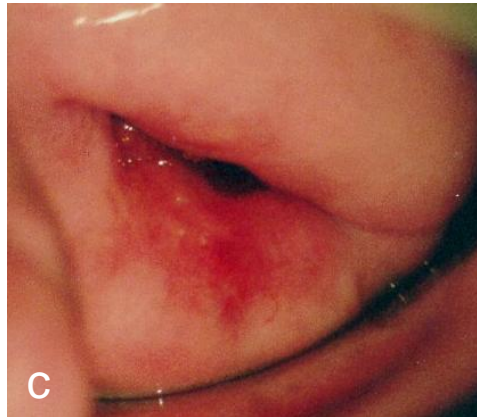
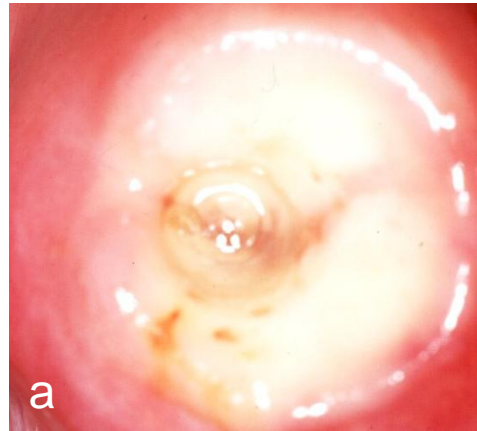
Source: Comprehensive cervical cancer control: a guide to essential practice. WHO 2006

Cryofreezing in progress



The cryoprobe covers the lesion well (a, b). Note the iceball formation in c, d and e. Note the appearance after thawing in f

Appearance of cervix



- (a) Iceball on cervix immediately after cryotherapy
- (b) Appearance 2 weeks after cryotherapy
- (c) Appearance 3 months after cryotherapy
- (d) Appearance 1 year after cryotherapy

Instructions after cryotherapy

- No vaginal douche for 4 weeks
- No vaginal packings / tampons for 4 weeks
- No sexual intercourse for 4 weeks
- Use of condoms if abstinence cannot be ensured
- Usual physical activity can be resumed soon after treatment

Side effects / complications

- Lower abdominal pain/cramps
- Vaginal pain/cramps
- A freezing feeling in the lower abdomen
- Fainting attacks
- Anaphylactic shock (very rare)
- Vaginal discharge for 2-3 weeks (profuse, watery)
- Light bleeding or spotting in the first weeks
- Infection of the sloughing area

Symptoms after cryotherapy that should prompt visit to doctor

- Fever > 2 days
- Severe lower abdominal pain/cramps
- Bleeding heavier than heaviest days of menstrual bleeding > 2 days
- Bleeding with clots
- Foul smelling excessive discharge

Cryotherapy follow-up care

- After 6-8 weeks to assess healing (seldom possible in developing countries)
- After 1 year to assess response (healing of CIN)

Cryotherapy long-term sequelae

- Rare complications
 - Cervical stenosis
 - Chronic pelvic inflammatory disease
- No adverse effects on fertility or pregnancy

Cleaning and disinfection of cryotherapy equipment

- Decontaminate unit, hose and regulator by wiping with 70% ethyl alcohol
- Wash the cryoprobe with soap and water
- Disinfect the cryoprobe by boiling in water for 20 minutes or steam for 20 minutes or soak in 2-4% glutaraldehyde for 20 minutes and rinse with boiled water
- If the above high level disinfection options are not available, soak the cryoprobe in 70-90% ethyl alcohol for 20 minutes

Cryotherapy by nurses: Indian study

- Cure rates, side effects and complications of cryotherapy by nurses, Dindigul District, India
 - Total women with CIN treated: 1026
 - Overall cure rate for CIN: 80.3% (824/1026)
 - Cure rate for CIN 1: 81.4% (752/924)
 - Cure rate for CIN2-3: 68.0% (17/25)
 - Minor side effects and complications: < 3% of treated women

Source: Sankaranarayanan et al. Br J Cancer. 2007;96(5):738-43

Cryotherapy by midwives: Indian study

- Cure rates, side effects and complications of cryotherapy by nurses, Dindigul District, India
 - Total women with CIN treated: 574
 - Overall cure rate for CIN: 93.7% (538/574)
 - Cure rate for CIN 1: 96.4% (451/468)
 - Cure rate for CIN2-3: 82.1% (87/106)
 - Minor side effects and complications: < 3% of treated women

Source: Nene BM et al. Int J Gynaecol Obstet. 2008 Dec;103(3):232-6

Thank you

This presentation is available at
www.uicc.org/cervicalcancercurriculum