Visual inspection with acetic acid (VIA): Evidence to date

Original source:

Alliance for Cervical Cancer Prevention (ACCP)
www.alliance-cxca.org

Overview:

- Description of VIA and how it works
- Infrastructure requirements
- What test results mean
- Test performance
- Strengths and limitations
- Program implications in low-resource settings

Types of visual inspection tests:

- **Visual inspection with acetic acid (VIA)** can be done with the naked eye (also called cervicoscopy or direct visual inspection [DVI]), or with low magnification (also called gynoscopy, aided VI, or VIAM).
- **Visual inspection with Lugol's iodine (VILI),** also known as Schiller's test, uses Lugol's iodine instead of acetic acid.

What does VIA involve?

- Performing a vaginal speculum exam during which a health care provider applies dilute (3-5%) acetic acid (vinegar) to the cervix.
  - Abnormal tissue temporarily appears white when exposed to vinegar.
- Viewing the cervix with the naked eye to identify color changes on the cervix.
- Determining whether the test result is positive or negative for possible precancerous lesions or cancer.

What infrastructure does VIA require?

- Private exam area
- Examination table
- Trained health professionals
- Adequate light source
- Sterile vaginal speculum
- New examination gloves, or HLD surgical gloves
- Large cotton swabs
- Dilute (3-5%) acetic acid (vinegar) and a small bowl
- Containers with 0.5% chlorine solution
- A plastic bucket with a plastic bag
- Quality assurance system to maximize accuracy

Categories for VIA test results:

VIA Category	Clinical Findings
Test-negative	No acetowhite lesions or faint acetowhite lesions; polyp, cervicitis, inflammation, Nabothian cysts.
Test-positive	Sharp, distinct, well-defined, dense (opaque/dull or oyster white) acetowhite areas—with or without raised margins touching the squamocolumnar junction (SCJ); leukoplakia and warts.
Suspicious for cancer	Clinically visible ulcerative, cauliflower-like growth or ulcer; oozing and/or bleeding on touch.

Categories for VIA tests results:

- Acetowhite area far from squamocolumnar junction (SCJ) and not touching it is insignificant.
- Acetowhite area adjacent to SCJ is significant.

Negative

Positive

Photo source: JHPIEGO

Categories for VIA tests results:

Suspicious for cancer

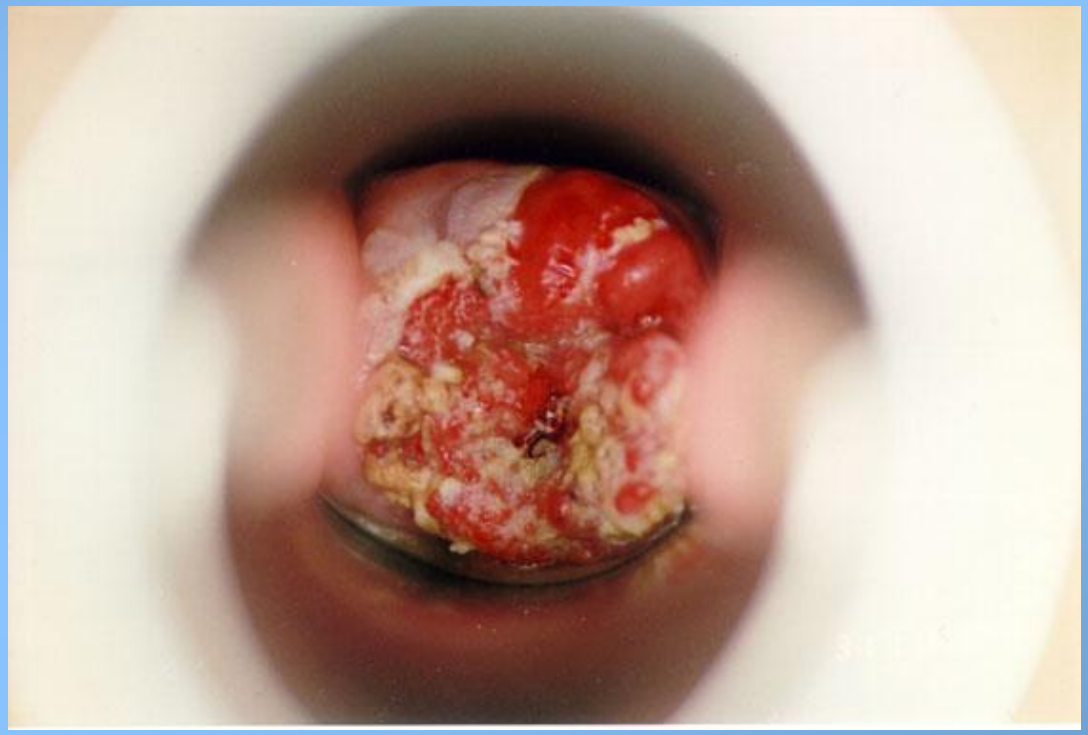

Photo source: PAHO, Jose Jeronimo

Management options: What to do if the VIA test is positive?

- Offer to treat immediately.
- Refer for confirmatory diagnosis or adjunctive test.

Test performance: Sensitivity and specificity

- Sensitivity: The proportion of all those with disease that the test correctly identifies as positive.
- Specificity: The proportion of all those without disease (normal) that the test correctly identifies as negative.

VIA test performance (n=7):

	Sensitivity	Specificity
Minimum	65%	64%
Maximum	96%	98%
Median*	84%	82%
Mean*	81%	83%

* Weighted median and mean based on study sample size

Source: Adapted from Gaffikin, 2003

Strengths of VIA:

- Simple, easy-to-learn approach that is minimally reliant upon infrastructure.
- Low start-up and sustaining costs.
- Many types of health care providers can perform the procedure.
- Test results are available immediately.
- Requires only one visit.
- May be possible to integrate VIA screening into primary health care services.

Limitations of VIA:

- Moderate specificity results in resources being spent on unnecessary treatment of women who are free of precancerous lesions in a single-visit approach.
- No conclusive evidence regarding the health or cost implications of over-treatment, particularly in areas with high HIV prevalence.
- There is a need for developing standard training methods and quality assurance measures.
- Likely to be less accurate among post-menopausal women.
- Rater dependent.

Conclusions:

- VIA is a promising new approach.
- Ongoing VIA-based projects by ACCP partners in a number of countries are investigating long-term effectiveness of the VIA test-and-treat approach.
- Several questions remain, including:
  - Which factors maximize VIA's performance?
  - How can quality of VIA services outside of a controlled setting be ensured?
  - How can VIA best be incorporated into prevention programs?
  - What is the long-term impact on cancer mortality from programs incorporating VIA?

References:

- ACCP. Visual screening approaches: Promising alternative screening strategies. Cervical Cancer Prevention Fact Sheet. (October 2002).
- ACCP & World Health Organization. Cervical cancer prevention in developing countries: A review of screening and programmatic strategies. (Forthcoming, November 2003).
- Gaffikin L, Lauterbach M, Blumenthal PD. "Performance of visual inspection with acetic acid for cervical cancer screening: A qualitative summary of evidence to date," *Obstetrical and Gynaecological Review* 58(8):543-550. (August 2003).
- McIntosh N, Blumenthal PD, Blouse A, eds. Cervical cancer prevention guidelines for low-resource settings. Baltimore, MD:JHPEIGO. (2001).
- Riegelman RK and Hirsch RP. Studying a study and testing a test: How to read the medical Literature (2nd Edition). Boston, MA:Little, Brown and Company. (1989).

For more information on cervical cancer prevention:

- The Alliance for Cervical Cancer Prevention (ACCP) www.alliance-cxca.org
- ACCP partner organizations:
  - EngenderHealth www.engenderhealth.org
  - International Agency for Research on Cancer (IARC) www.iarc.fr
  - JHPIEGO www.jhpiego.org
  - Pan American Health Organization (PAHO) www.paho.org
  - Program for Appropriate Technology in Health (PATH) www.path.org