

Registry of Smallpox Vaccine in Pregnancy

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Outline of Presentation

- Background:
 - Recommendations
 - Smallpox vaccine and pregnancy
- Registry
 - Rationale
 - Objectives
 - Methods
 - Use of data

Smallpox Vaccine: Recommendations

- Some people are at greater risk for serious side effects from the smallpox vaccine. Individuals who are pregnant, who live with someone who is pregnant, or who have close contact with someone who is pregnant should NOT get the smallpox vaccine unless they have been exposed to the smallpox virus.

Pre-Vaccination Screening

- Multiple efforts to decrease likelihood of exposing pregnant women to smallpox vaccine
- Some individuals will be inadvertently exposed

Inadvertent Exposures

- Vaccine recipient did not know she was pregnant
- Vaccine recipient was unaware that a close contact was pregnant
- Vaccine recipient chose not to disclose
- Screening procedure was not sufficiently sensitive
- Conception in the 28 days following vaccination

Estimated # of Pregnancies Among Vaccine Recipients

- 500,000 health care workers
 - Age and gender distribution
 - “Occult pregnancy”
 - Incident pregnancy within 4 weeks
 - Education and screening
- -> ~ 1000-1200 exposed pregnancies among vaccinated women

Smallpox Vaccine in Pregnancy Registry

- *What?* a surveillance tool
- *Why?* to follow and monitor
- *Whom?* pregnant women who are inadvertently exposed to smallpox vaccine

Definitions

- Exposed pregnancy:
 - vaccine recipient: pregnant at vaccination or becomes pregnant within 28 days
 - close contact to a vaccine recipient: pregnant or becomes pregnant within 28 days following the vaccination of the vaccine recipient
- Close contact:
 - household member or close physical contact (e.g., sex partner)

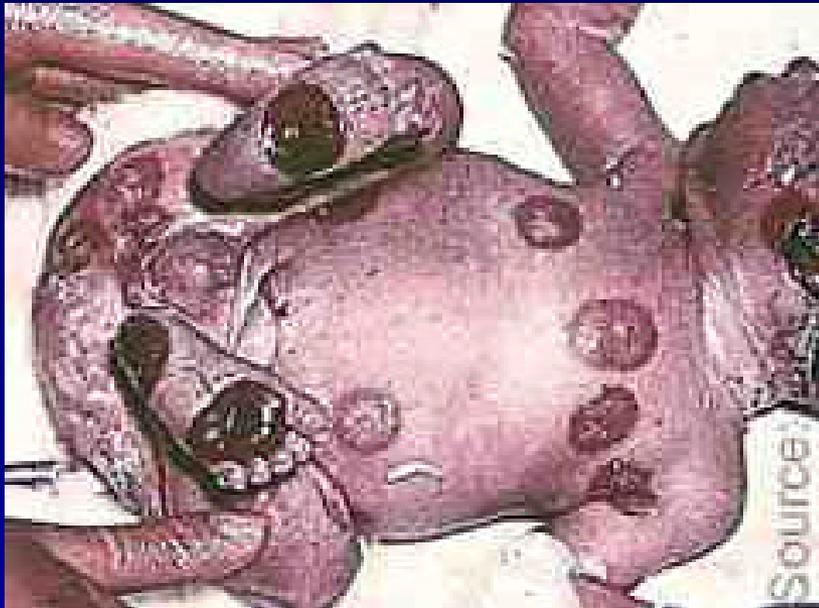
Smallpox Vaccine and Pregnancy

- Case reports
- Cohort studies

Fetal Vaccinia

- Classic presentation = fetal vaccinia:
 - Typical skin lesions
 - Involvement of the placenta
 - Disseminated infection of fetal organs
 - Fetal or neonatal death
- Rare: fewer than 50 cases reported

Risk of Smallpox Vaccination - Case Reports of Fetal Vaccinia



Fetal Vaccinia

- Fetal vaccinia has been described in:
 - All three trimesters of pregnancy
 - Primary vaccination and revaccination
 - Pregnant contacts of vaccinated children

Other Pregnancy Outcomes

- Spontaneous Pregnancy Loss?
 - Debated in the literature
 - Few studies detected an increase; most have not
 - Limitations of historical studies
 - Study design
 - Detection of early pregnancy and early pregnancy loss
- No association suggested:
 - Congenital malformations
 - Maternal adverse reactions

Background: Summary

- Small but real risk of adverse fetal events exists
- Inadvertent exposures may occur and outcomes of such exposures should be monitored

Why a Registry?

Monitoring experiences and outcomes is:

- Critical to
 - Safety of the public
 - Success of current and subsequent stages of the vaccination program
- IOM endorsement



Objectives of Registry

- Describe the outcomes of exposed pregnancies
- Describe the spectrum of fetal infection and fetal disease
- Determine risks
 - Fetal infection and fetal disease
 - Spontaneous pregnancy loss
 - Other outcomes

Methods

- National registry (CDC)
- Goal: prospective data collection → exposure to outcome
 - Prior to knowledge of outcome
 - Otherwise tagged as retrospective
- Reporting from multiple sources
- Follow up for outcome(s)

Registry Announcement

- Public health and clinical associations
 - CSTE, NACCHO, ASTHO, ACOG, AAFP, other
- Health departments
 - Bioterrorism, immunization programs, antenatal services
- Teratogen Information Service
- Media
- Websites: CDC and partner organizations
- MMWR and peer review journals
- Webcasts & other training



Methods: Reporting and Enrollment

- Reports initiated from multiple sources:
 - Vaccine recipients or close contacts
 - Physicians (HAP or community)
 - Health departments
- Routing through multiple channels
- Enrollment questionnaire completed by health care provider

Methods: Enrollment Data Collected

- Contact information
- Patient demographics
- Health care providers (OB and other primary)
- Vaccine data
- Clinical data
 - Current pregnancy and exposures
 - Medical history
 - Following vaccine exposure



Methods: Pregnancy Outcome

- Active ->
 - Periodic questionnaires and medical record reviews
 - Maternal
 - Infant
- Passive ->
 - Unsolicited reports from physicians, exposed women, or CDC clinical consultants

Use and Dissemination of Registry Data

- Uses:
 - To provide accurate, current information re: smallpox vaccine and pregnancy
 - To improve screening procedures (if necessary)
- Dissemination:
 - Feedback of data to reporters via annual reports
 - MMWR, reports posted to the CDC website and through peer review journal publications



Future Options Under Consideration

- Expand registry to include exposures in other groups for whom vaccine is contraindicated:
 - Immunocompromised
 - Eczema, atopic dermatitis
 - Other

For More Information or Updates

- Clinician Information Line 1-877-554-4625
- State Information Line (to be determined)
- Public Response Service 1-888-246-2675
- <http://www.cdc.gov/smallpox/>



Thank You



Extra slides if necessary



Summary

By prospectively following pregnant women exposed to smallpox vaccine, we will learn more about the risks of smallpox vaccine in pregnancy

Registry vs. VAERS

- VAERS:
 - Outcome-oriented
 - Adverse events
- Registry:
 - Exposure-oriented
 - Inadvertent exposures
 - Outcome not known at enrollment (ideally)

Fetal vaccinia: summary of case reports

Summary of 21 cases/20 pregnancies, 1932-1972

- Vaccination among 20 women
 - 18 women vaccinated; 2 contact to vaccinated child
 - 13 primary vaccinees; 3 revaccinated; 4 unknown
 - 7 in 3rd-12th week; 13 in 13th-24th week
- Outcomes:
 - Pregnancies ended after a mean delay of 8 wks
 - 1 full term; 19 premature
 - 11 abortions or stillbirths; 10 live births; 3 survivors



Frequency or risk of adverse fetal effects

- Difficult to quantitate, but small
- Studies challenged for:
 - Type I error:
 - Inability to diagnose vaccinia among the products of fetal loss
 - Choice of study or comparison cohort
 - Type II error: small numbers & infrequent risk
- Insensitivity in detecting early pregnancy or early pregnancy loss

