Varicella-Zoster Virus Vaccination &Pregnancy

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Fellowship of Infertility

Varicella–zoster virus (VZV) is a double-stranded DNA herpesvirus acquired predominately during childhood, and 90 percent of adults have serological evidence of immunity.

The incidence of adult varicella declined by 82 percent after the introduction of varicella vaccination, and this has resulted in a drop in maternal and fetal varicella rates (ACOG).

- **Primary infection—*varicella* or *chickenpox*—is transmitted by direct contact with an infected individual, although respiratory transmission has been reported.**
- **The incubation period is 10 to 21 days, and a nonimmune woman has a 60- to 95% risk of becoming infected after exposure.**
- **Primary varicella presents with a 1- to 2-day flulike prodrome, which is followed by pruritic vesicular lesions that crust after 3 to 7 days.**
- **Infection tends to be more severe in adults .**

- Affected patients are then contagious from 1 day before the onset of the rash until the lesions become crusted.
- Mortality is predominately due to VZV pneumonia, which is thought to be more severe during adulthood and particularly in pregnancy.
- Although the incidence was once thought to be higher, only 2 to 5 % of infected pregnant women develop pneumonitis.
- Risk factors for VZV pneumonia include smoking and having more than 100 cutaneous lesions.
- Maternal mortality rates with pneumonia have decreased to 1 to 2%.

Symptoms of VZV pneumonia usually appear 3 to 5 days into the course of illness.

Characteristic are:

- **Fever**
- **Tachypnea**
- **Dry cough**
- **Dyspnea**
- **Pleuritic pain.**
- **Nodular infiltrates are similar to other viral pneumonias**

Although resolution of pneumonitis parallels that of skin lesions, fever and compromised pulmonary function may persist for weeks.

If primary varicella is reactivated years later, it causes herpes zoster or shingles.

This presents as a unilateral dermatomal vesicular eruption associated with severe pain.

Zoster does not appear to be more frequent or severe in pregnant women.

Congenital varicella syndrome rarely develops in cases of maternal herpes zoster.

Zoster is contagious if blisters are broken, although less so than with primary varicella.

Fetal and Neonatal Infection

In women with varicella during the first half of pregnancy , the fetus may develop *congenital varicella syndrome*. Some features include:

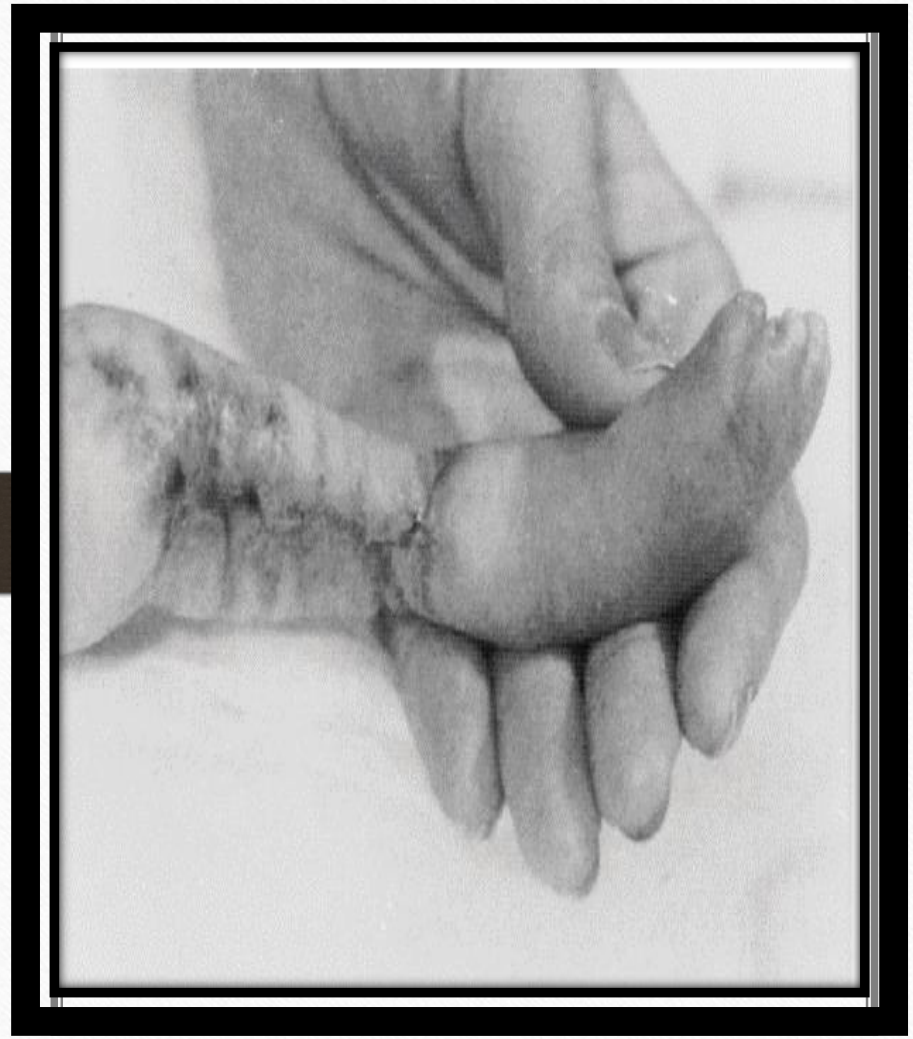
- **Chorioretinitis**
- **Microphthalmia**
- **Cerebral cortical atrophy**
- **Growth restriction**
- **Hydronephrosis**
- **Limb hypoplasia**
- **Cicatricial skin lesions**

1373 pregnant women with varicella were evaluated :

When maternal infection developed before 13 weeks, only two of 472 pregnancies—0.4 %—had neonates with congenital varicella syndrome.

The highest risk was between 13 and 20 weeks, during which time seven of 351 exposed fetuses—2 %—had evidence of congenital varicella.

After 20 weeks' gestation, the researchers found no clinical evidence of congenital infection.



Atrophy of the lower extremity with bony defects and scarring in a fetus infected during the first trimester by varicella.

(Reproduced with permission from Paryani SG, Arvin AM: Intrauterine infection with varicella zoster virus after maternal varicella).

Sporadic reports have described CNS abnormalities and skin lesions in fetuses who developed congenital varicella in weeks 21 to 28 of gestation.

If the fetus or neonate is exposed to active infection just before or during delivery, and therefore before maternal antibody has been formed, the newborn faces a serious threat.

Attack rates range from 25 to 50 %, and mortality rates approach 30 %. In some instances, neonates develop disseminated visceral and CNS disease , which is commonly fatal.

For this reason , varicella-zoster immune globulin (VZIG) should be administered to neonates born to mothers who have clinical evidence of varicella 5 days before and up to 2 days after delivery.

Diagnosis

Maternal varicella is usually diagnosed clinically.

Infection may be confirmed by NAAT of vesicular fluid, which is very sensitive.

The virus may also be isolated by scraping the vesicle base during primary infection and performing a Tzanck smear, tissue culture, or direct fluorescent antibody testing.

Congenital varicella may be diagnosed using NAAT analysis of amnionic fluid, although a positive result does not correlate well with the development of congenital infection .

A detailed anatomical sonographic evaluation performed at least 5 weeks after maternal infection may disclose abnormalities, but the sensitivity is low.

Management

Exposed gravidas with a negative history for chickenpox should undergo VZV serological testing.

At least 70 percent of these women will be seropositive, and thus immune.

Exposed pregnant women who are susceptible (seronegative) should be given varicella-zoster immune globulin (VariZIG).

Although best given within 96 hours of exposure, its use is approved for up to 10 days to prevent or attenuate varicella infection (Centers for Disease Control and Prevention).

Passive immunization appears to be highly effective.

In women with known history of varicella, VariZIG is not indicated.

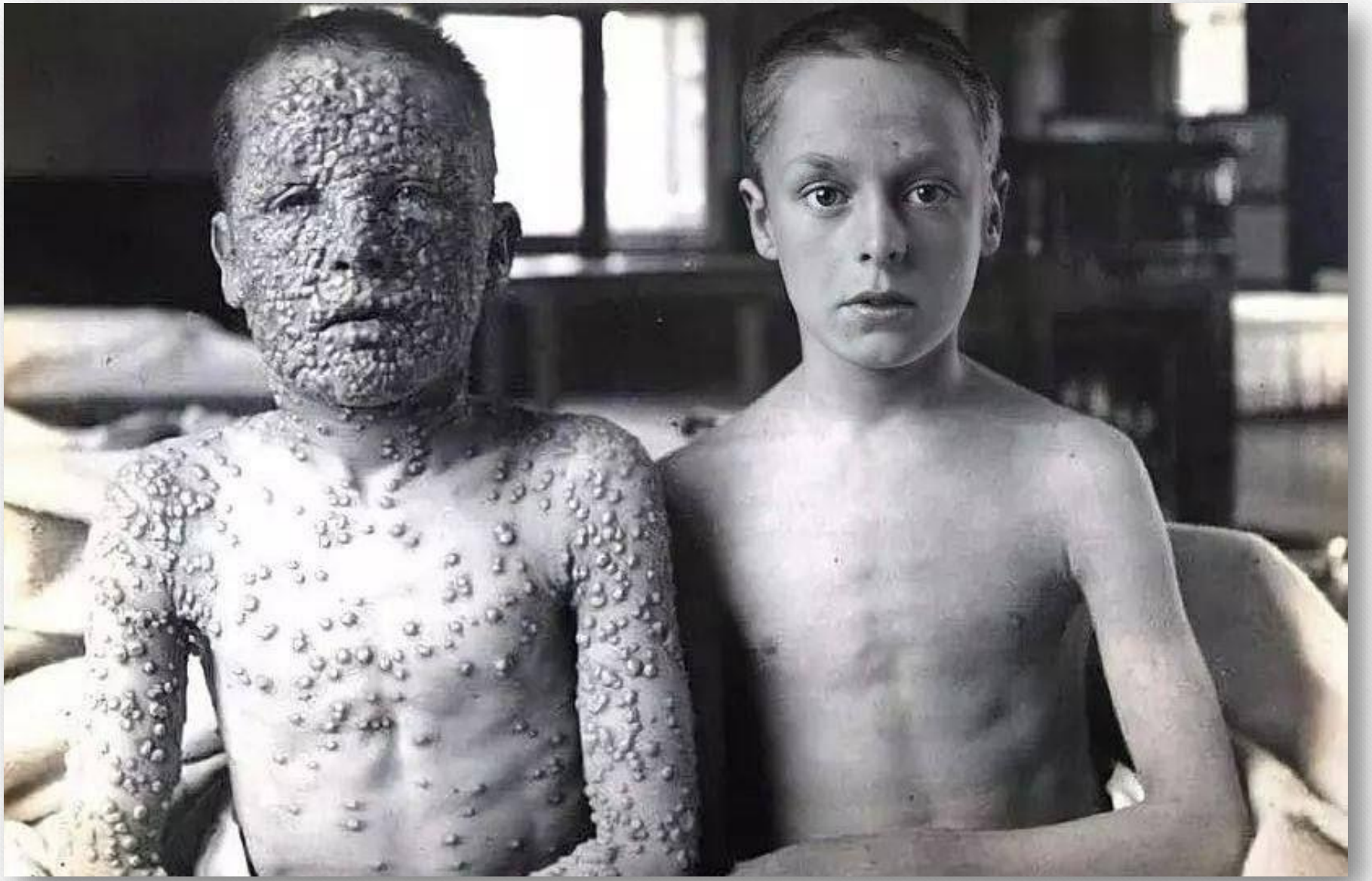
Any patient diagnosed with primary varicella infection or herpes zoster should be isolated from pregnant women.

Because VZV pneumonia often presents with few symptoms, a chest radiograph is recommended by many.

Most women require only supportive care , but those who require intravenous (IV) fluids and especially those with pneumonia are hospitalized.

IV acyclovir therapy is given to women requiring hospitalization—500 mg/m2 or 10 to 15 mg/kg every 8 hours.

Vaccination



An attenuated live-virus vaccine is recommended for nonpregnant adolescents and adults with no history of varicella.

Two doses of *Varivax* are given 4 to 8 weeks apart, and the seroconversion rate is 98 % .

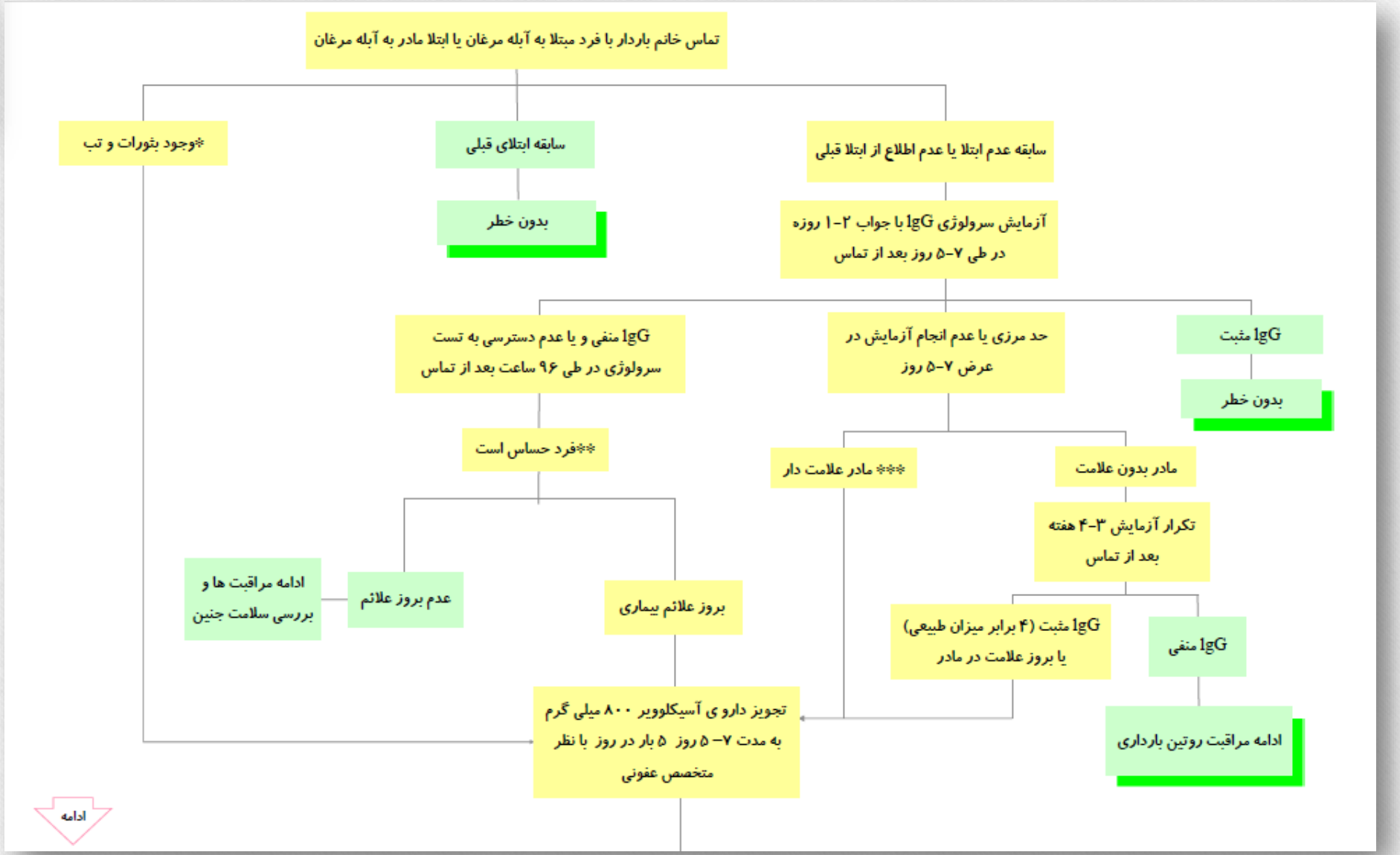
Importantly, vaccine-induced immunity diminishes over time, and the breakthrough infection rate approximates 5 % at 10 years.

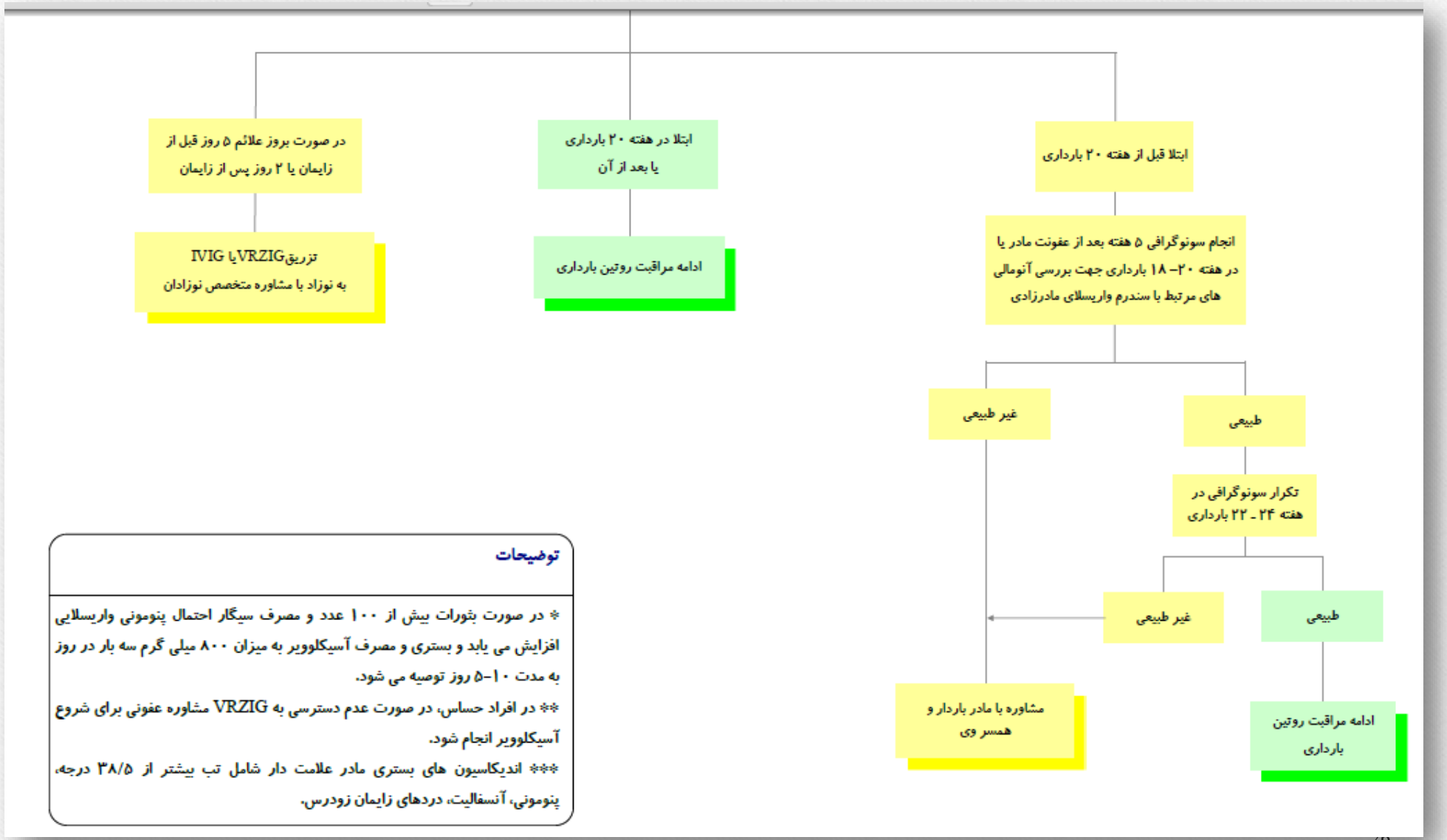
The vaccine is not recommended for pregnant women or for those who may become pregnant within a month following each vaccine dose.

That said, a registry of more than 1000 vaccine exposed pregnancies reports no cases of congenital varicella syndrome or other associated congenital malformations.

The attenuated vaccine virus is not secreted in breast milk. Thus, postpartum vaccination should not be delayed because of breastfeeding (American College of Obstetricians and Gynecologists).

Summary


تماس خانم باردار با فرد مبتلا به آبله مرغان یا ابتلا مادر به آبله مرغان
*وجود بثورات و تب
سابقه ابتلای قبلی
بدون خطر
سابقه عدم ابتلا یا عدم اطلاع از ابتلا قبلی
آزمایش سرولوژی IgG با جواب ۲-۱ روزه
در طی ۷-۵ روز بعد از تماس
IgG منفی و یا عدم دسترسی به تست
سرولوژی در طی ۹۶ ساعت بعد از تماس
حد مرزی یا عدم انجام آزمایش در
عرض ۷-۵ روز
IgG مثبت
بدون خطر
**فرد حساس است
*** مادر علامت دار
مادر بدون علامت
ادامه مراقبت ها و
بررسی سلامت جنین
عدم بروز علائم
بروز علائم بیماری
تکرار آزمایش ۳-۴ هفته
بعد از تماس
IgG مثبت (۴ برابر میزان طبیعی)
یا بروز علامت در مادر
IgG منفی
تجویز دارو ی آسیکلووير ۸۰۰ میلی گرم
به مدت ۷- ۵ روز ۵ بار در روز با نظر
متخصص عفونی
ادامه مراقبت روتین بارداری
ادامه



توضیحات

* در صورت بثورات بیش از ۱۰۰ عدد و مصرف سیگار احتمال پنومونی واریسلایی افزایش می یابد و بستری و مصرف آسیکلوویر به میزان ۸۰۰ میلی گرم سه بار در روز به مدت ۱۰–۵ روز توصیه می شود.

** در افراد حساس، در صورت عدم دسترسی به VRZIG مشاوره عفونی برای شروع آسیکلوویر انجام شود.

*** اندیکاسیون های بستری مادر علامت دار شامل تب بیشتر از ۳۸/۵ درجه، پنومونی، آنسفالیت، دردهای زایمان زودرس.


بسیار
سپاس گزارم


پاییز تون زیبا