EDITORIAL

Chicken pox in pregnancy - a challenge to the obstetrician

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Chicken pox (primary varicella zoster) is caused by *Varicella zoster* virus (VZV) – a member of the herpes virus family. This is highly contagious. A pregnant woman can contract this infection during pregnancy with risks to herself as well as her unborn foetus or neonate. The gestational period of infection and the immunological status of the mother can alter the effect of the infection on both mother and the foetus or the new born. Although only 2% of the chicken pox occurs in adults, more than 20 years over 90% of the antenatal population are seropositive to varicella zoster immunoglobulin antibody [1]. After primary infection the virus remain dormant in the sensory root ganglia but may be reactivated to produce herpes zoster (shingles). This does not cause any foetal sequelae[2].

Effect on the mother

Maternal risk includes pneumonia (10%), hepatitis and encephalitis mostly. Severity of complications seems to increase with advancing gestational age. The mortality rate of untreated varicella pneumonia in pregnancy exceeds 40% which may be reduced up to 15 % or less with aggressive treatment [3].

Delivery during the viraemic period includes the risks of bleeding, thrombocytopenia, disseminated intravascular coagulopathy and hepatitis in addition to neonatal varicella. Neonatal varicella if complicated lead to a mortality rate of 25% [3].

Foetal risks

It varies according to the period of gestation.

Before 20 weeks of gestation

Foetal varicella syndrome (FVS) occurs in primary varicella infection which occurs before 20 weeks of pregnancy. It is characterised by dermatomal skin scarring, eye defects (viz. microphthalmia, chorioretinitis, cataract, optic disc hypoplasia, horner's syndrome), hypoplasia of limbs, missing or hypoplastic digits, limb paralysis, muscle atrophy and neurological abnormalities (microcephaly, cortical atrophy, mental retardation, convulsions and dysfunction of bowel and bladder splinter) [4].

Between 20 weeks to 30 weeks of gestation

Maternal varicella infection during this period does not have any adverse effect on the foetus but it may affect the child in the 1st few years of life as shingles or herpes zoster [5].

After 36 weeks of gestation

The risks of varicella of the newborn are highest when the maternal infection occurs 7 days prior to or after delivery. It is more evident if it occurs prior to 5 days to 48 hours after delivery. A very high neonatal mortality of 25 to 30 % is observed in such cases [6].

Diagnosis

IgG and IgM antibody specific to the varicella zoster can be detected in the infected mother. Prenatal diagnosis of congenital varicella is done by examining the antibody or DNA of varicella in

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amniotic fluid or foetal blood.

Management

When a pregnant mother has significant exposure and not immune to varicella, she should be given varicella zoster immunoglobulin (VZIG) as soon as possible, preferably within 24 hours (not later than 10 days). Oral acyclovir after 20 weeks is safe and relieves symptoms and severity of the disease. It is to be given at the dose of 800 mg 5 times daily for 7 to 10 days. Treatment is to be started within 24 hours of developing rash to have proper effects. To prevent severity of infection maintenance of hygiene and symptomatic treatment is necessary. All complicated cases are to be referred to a tertiary hospital for proper management by a multidisciplinary approach [7].

In case of severe infected one in the peripartum period acyclovir may be administered IV as 10 mg/kg body weight 8 hourly for 7 days.

Prevention

In case of infection before 20 weeks of gestation the patient should be informed about the 1-2% risks of developing FVS and its implications. A detail ultrasonographic assessment is necessary after 5 weeks of infection or at 16-20 weeks of gestation. In selected cases after proper counselling, MTP may be considered. Neonatal ophthalmic examination is to be considered at birth.

If delivery occurs within 5 days of infection or the mother develops chicken pox within 2 days of giving birth, the neonate should be treated with VZIG. The infant should be monitored for signs of infection for 14-16 days. If chicken pox develops the neonate should be treated with acyclovir.

In relevant cases of infection after 36 weeks of pregnancy or with onset of preterm labour an attempt to postpone the labour at least by 5 days is useful so that sufficient antibody may be produced in the neonatal circulation.

Conclusion

Diagnosis and management of chicken pox is essential in the earliest opportunity but sometimes it may become challenging for the obstetrician. A multidisciplinary approach involving virologist, obstetrician, neonatologist, physician etc is essential to manage such situations of complicated cases because of its implications both in the mother and the foetus or newborn.

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