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Mini Review

Chickenpox infection in children, action to take

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Summary

What to do in the event of a varicella infection in pregnant women or children is sometimes not well known. Several therapies are available to doctors; specific immunoglobulins, anti virals, vaccination. We propose a decision tree

Introduction

Chickenpox is a viral disease caused by the Varicella Zoster Virus (VZV) of the Herpes group. The herpes viridae family consists of around 100 viruses, 8 of which are strictly human. These viruses have certain characteristics in common. They are high molecular weight DNA viruses.

Chickenpox is a viral and highly contagious disease that occurs preferentially during childhood. Although the disease is most often benign, secondary infections cutaneous, neurological or pulmonary may occur. The frequency of occurrence of these complications increases with age.

Vaccination is possible but not recommended in the general population in France. It is a very contagious disease affecting mainly infants and young children. Chickenpox is usually considered benign, but it can be the cause of complications (up to 30% in the general population) sometimes severe (2 to 4%) justifying hospitalization both in the subject without history and in certain populations. vulnerable such as newborns, unimmunized pregnant women and subjects with congenital or acquired immunosuppression (retrovirus infection type) [1]. The objective of this article is to suggest in the child (or his pregnant mother) the action to be taken in the event of chickenpox contagion. The patient's serological status must be known: history of chickenpox or vaccination, immunization status of the mother in the newborn [2]. If the patient is immune and does not have one of the above-mentioned risk areas, the patient is protected and does not justify any specific measure apart from simple monitoring. Only current immunosuppressive therapy or acquired immunosuppression justifies specific post-exposure management with aciclovir (Zovirax®) or valaciclovir (Zelitrex®), or prescriptions with specific anti-VZV immunoglobulins (Varitect®); It is therefore necessary to look for the existence of a possible ground at risk of serious chickenpox.

One of the most risky situations is chickenpox in unimmunized pregnant women [3]: it itself is at risk, in particular for severe pneumonia; but also his fetus, on the one hand between 13 and 20 weeks amenorrhea (AS) with the risk of embryo-fetopathy (growth retardation, cutaneous, skeletal and central and peripheral neurological damage) [Figures 1,2] in approximately 2 % of cases [3]: and on the other hand in the week preceding childbirth or immediately after, with the risk in the newborn of developing severe neonatal chickenpox in 20 to 50% of cases.

Figure 1: Peripheral damage.

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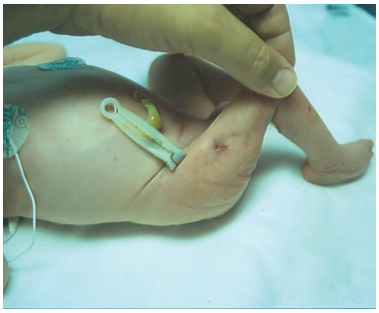

Figure 2: Neurological damage

In healthy children, age (between 1 and 12 months) is one of the risk factors for presenting complications and severe forms are pneumonia (before 6 months) depending on the maternal status, encephalitis, and superinfections of soft tissues. These complications can be favored by the use of non-steroidal anti-inflammatory drugs, in particular with superinfections with group A Streptococcus [4-5]. In adolescents as in adults, these complications are also more frequent, as well as in immunocompromised subjects with mortality after 15 years.

Human immunoglobulins specific for VZV (Varitect®) are available by nominative ATU. They can be used in pregnant women after contagion (without notion of previous chickenpox), preferably between 96 hours after and up to 10 days after as recommended by the American Academy of Pediatrics in particular [6]; expert advice is helpful. They may also be of interest in the newborn if the mother has perinatal chickenpox (1 to 2 weeks before or after childbirth) [7]. Specific human immunoglobulins do not give side effects. True hypersensitivity reactions are rare in newborns. In pregnant women it is especially important to ensure a slow infusion.

In post-exposure, the infant from 1 to 6 months is protected by the transfer of antibodies of maternal origin as well as in the immunocompromised child. The place of antiviral treatments such as valaciclovir (Zelitrex®) or acyclovir (Zovirax®) is debated. Antivirals are generally well tolerated but side effects should be checked in pregnant women and newborns, especially kidney function.

However, their use is more and more proposed in the risk situations described above, in the absence of specific Ig or in case of too long delay (> 96h). A treatment outside the recommendations can be proposed in the subject immunized against chickenpox if he is receiving immunosuppressive therapy. In newborns less than 28 weeks old or less than 1000 g of unimmunized mother infected by a third party during her hospitalization, antiviral treatment may be offered if he has not been able to benefit from specific immunoglobulins. The prescription of oral antivirals in infants 1 to 12 months of age whose source of contamination is intrafamilial (by proximity and direct contamination) has not proven its effectiveness.

Prevention by vaccination (2 vaccines available: Varilix® and Varivax®) is not generally recommended but only in targeted populations (women of childbearing age without a history of chickenpox, adolescents over 12 years old, immunocompromised subjects, health workers) [4,8]. It can also be used as part of post exposure prevention in children over 12 years of age and unimmunized adults within 3 days of contagion [8].

Conclusion

Chickenpox is certainly a contagious disease most often benign, but the severe forms exist in populations at risk, mainly pregnant women and newborns of unimmunized mothers as well as immunocompromised children. Therapeutic possibilities are then available such as specific immunoglobulins, antivirals and vaccination.

We offer a decision tree in the event of chickenpox disease [9].

References

1. Epidémiologie de la varicelle en France. BEH 22 Février 2005. **Link:** https://bit.ly/3kEJtjc
2. Pinquier D, Lécuyer A, Levy C, Gagneur A, Pradat P, et al. (2011) Inverse correlation between varicella severity and level of antivaricellaZoster virus maternal antibody in infants below one year of age. Hum Vaccin 7: 534-538. **Link:** https://bit.ly/35JQzwv
3. Bruel H, Chabrolle JP, El Khoury E, Poinsot J, Amusini P, et al. (2004) A propos de deux cas de varicelle congénitale: plaidoyer pour la vaccination des femmes en âge de procréer. Arch Pediatr 11: 216-218. **Link:** https://bit.ly/3kEJG5Y
4. Haut conseil de la santé publique (2016) Guide pour l 'immunisation en post exposition, vaccination et immunoglobulines. Collection avis et rapport. **Link:** https://bit.ly/2HIXSg0
5. Stephan JL (2007) Conduite initiale chez un enfant sous immunosuppresseur présentant une infection sévère. Pas à pas Arch ped 14. **Link:** https://bit.ly/35HYACi
6. Centers for Disease Control and Prevention (2012) FDA approval of an extended period for administering VariZIG for postexposure prophylaxis of varicella. MMWR Morb Mortal Wkly Rep 61: 212. **Link:** https://bit.ly/3jF6qkQ
7. CDC (2012) FDA Approval of an Extended Period for Administering VariZIG for Postexposure Prophylaxis of Varicella. MMWR 61: 212. **Link:** https://bit.ly/37PDEfa
8. Murguía-de-Sierra T, Villa-Guillen M, Villanueva- Garcia D, Molina A, Juárez-Chávez A, et al. (2005) Varicella zoster virus antibody titers after intravenous zoster immune globulin in neonates, and the safety of this preparation. Acta Paediatr 94: 790-793. **Link:** https://bit.ly/3kDaJyF
9. Calendrier vaccinal 2020. **Link:** https://bit.ly/35NmHQ5
10. Grimpel E, Launay E, Bruel H, Pinquier D (2020) Contage varicelleux chez l'enfant. Pas à Pas Arch Ped 3: S2-S4. **Link:** https://bit.ly/3oDKtqg

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