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Congenital Cytomegalovirus (CMV)

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Introduction

Cytomegalovirus (CMV) is a common herpes virus infection that is usually harmless and harmless to a group of infections, but can cause serious problems in premature infants, very young infants, and the elderly. CMV can cause a wide range of symptoms, from mild flu-like symptoms to severe complications such as hearing loss and vision problems.

Prevalence

- CMV is the most frequent congenital infection in newborns and is the leading cause of hearing loss. Congenital infection occurs when the virus is passed from the mother to the fetus during pregnancy.
- The prevalence of congenital CMV infection is estimated to be 1 in 1200 live births in the United States, and 1 in 500 in regions with high levels of transmission.
- Preterm infants and infants born to mothers with CMV infection are at higher risk of complications.
- CMV can cause long-term effects on a newborn if a primary CMV infection occurs during pregnancy.

Pathophysiological Processes

Signs & Symptoms

According to Schleiss (2015), approximately 1% of infants with congenital CMV will have symptoms of the disease at birth and may include:
- Intracranial infection (cerebral calcifications, ventriculomegaly)
- Hearing loss
- Vision problems (microphtalmia, cataracts)
- Cardiac anomalies
- Respiratory distress
- Hepatosplenomegaly
- Gastrointestinal problems
- Hepatitis
- Pyrexia
- Respiratory symptoms

According to Schleiss (2015), CMV has a tendency to infect monocytes and lymphocytes. It is the biggest member of the herpesvirus family, with a double-stranded DNA molecule capable of encoding more than 200 potential protein products. It is a complex and probably includes a viral and cellular component. The method by which CMV infects and replicates in the host cell is through the action of a combination of direct fetal injury, and proteins that create site specificity. The existence of these cells indicates that CMV is in a person's body, it stays there throughout their life. (Centers for Disease Control and Prevention, 2010).

Intracranial calcifications frequently present a persistent feature of children with congenital CMV and are frequently encountered using CT scanning (see Figure 2 below). The finding of intracranial calcifications is present in approximately 10% of infants with congenital CMV and to educate our patient’s on prevention of transmission of this potentially detrimental viral infection while researchers continue to investigate and test potential vaccines for this virus.

Implications for Nursing Care

Women who have close contact with young children (i.e. daycare workers) are particularly at risk to contracting the CMV virus and passing it along to their unborn infant. However, routine screening for CMV is not recommended and there is not currently a vaccine available. Therefore, prevention of CMV transmission is focused on better hygienic practices including; routine hand washing, not sharing cups, utensils, or food, and not kissing a child on the lips or near saliva. Prevention-based interventions focus on education and counseling. (Thackeray, Wright, Chipman, 2014).

Conclusion

Despite recommendations that CMV be a part of health promotion counseling women of child-bearing age receive, less than 50% of obstetricians/gynecologists in the United States report counseling their patients about how to prevent CMV infection. Awareness of CMV is relatively low among women with only about 13-22% of women in the United States having heard of CMV (Thackeray, Wright, Chipman, 2014).

An advanced practice nurse, we have an opportunity to heighten awareness about congenital CMV and to educate our patient’s on prevention of transmission of this potentially detrimental viral infection while researchers continue to investigate and test potential vaccines for this virus.

References Cited


CMV Awareness Ribbon @ cmvfoundation.org

Additional Sources

