Journal of Women Health Care and Gynecology
2024 Volume 4, Issue 1
DOI: 10.59657/2993-0871.brs.24.059

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Case Report

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Hepatitis a in Pregnant Adolescents: Case Report

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Abstract

It is presented in the following the case of an 18-year-old female adolescent with a full-term pregnancy who goes to a second-level hospital. General malaise, fever, jaundice and labor is presented. She has an epidemiological history of consuming food and drinks from street venues and a partner who was diagnosed with hepatitis "A" a month ago. Paraclinical studies are taken, and a diagnosis of hepatitis "A" is confirmed. The pregnancy is resolved by cesarean section without subsequent complications for neither the mother nor the newborn.

Keywords: adolescent; hepatitis "A"; pregnancy; vaccine

Introduction

According to the World Health Organization, it is estimated that each year 1.5 million people are infected with hepatitis virus (HAV) with a low mortality of 0.3 to 0.6% [1]. In developing countries, infection by HAV is endemic: the Middle East, North Africa, Sub-Saharan Africa, Central and South Asia and Latin America [2]. In Mexico, in 2022, 4,242 cases were reported with an incidence of 3.26 per 100,000 inhabitants; however, the incidence by age group varies, those aged 5 to 9 years have the highest incidence of 6.87 and those aged 15 to 19 years have 4.59 per 100,000 inhabitants respectively [3].

Case Report

An 18-year-old female adolescent in labor attends a second level hospital with an Obstetric record; GII, abortions I, cesarean sections 0, Pregnancy at 38.2 weeks of gestation by USG first trimester. Vital signs upon admission: BP 116/73, HR 97x', RR 18x', Temperature 38.3 °C, O_2 saturation 95%. Upon questioning, the patient alludes that 30 days ago, her 28-year-old partner was diagnosed with hepatitis "A", who currently was asymptomatic. She and her partner are street food and drink consumers. The patient refers the complete vaccination schedule against hepatitis "B". A rapid test for Covid-19 was performed which was negative. In the last 5 days she developed fever, nausea and vomiting, and general malaise in a single day which subsided on its own. On physical examination: Glagow 15, cooperative, Head: normocephalic, icteric conjunctivae ++, pale integuments +. Neck: left submandibular lymph node less than 0.5 mm of diameter. Chest: Heartbeat of 70x' without stethoacoustic phenomena. CsPs good air inlet and outlet. Abdomen: soft, globose due to gravid uterus, right upper quadrant with discrete liver pain on palpation, normoperistalsis present.

Laboratory studies are taken, such as: blood count, blood chemistry, liver function test, clotting times, E.G.O. and viral panel for hepatitis "A, B and C", as well as USG (ultrasonogram) liver and bile ducts. The latter is reported without relevant alterations for the current condition. Laboratory studies upon admission show the following: Blood count:

leukocytes 7600 [neutrophils 6000 (79%)], lymphocytes 900 (11%)], hemoglobin 11.7g/dL, and platelets 212000. Blood chemistry: Glucose 86, urea 22, BUN 10, Creatinine 0.6, Bun/Crea Ratio 18. Liver Function Test: Total bilirubin 1.9, direct bilirubin 0.99, indirect bilirubin 0.93. ALT 2666 U/L (Normal values 7-36), AST 5474 U/L (Normal values 10-35), Total proteins 6.5, Albumin 3.2, Globulin 3.2, A/G ratio 1. Lactic dehydrogenase 3530 (Normal values 130- 500). Coagulation tests: Partial thromboplastin time 51 (Normal values 22-41), Prothrombin time 19 (Normal values 9.2-12), INR 1.72.

Due to maternal fever greater than 24 hours, fetal tachycardia and cephalo-pelvic disproportion at the expense of the maternal pelvis, to avoid complications due to *in situ* liver disease, the pregnancy is interrupted via cesarean section, obtaining a single male product weighing 3450 g, size 52 cm. Apgar 7/9 and Capurro at 40.4 weeks of gestation, apparently healthy. The studies in the adolescent, related for hepatitis "B and C" were reported negative, but not for hepatitis "A", in which was reported: Anti-hepatitis A-IgM antibody 10.6 (Reactive greater than 1.2), Anti-hepatitis A-IgG antibody 6.49 (Reactive greater than 1). She was discharged after 5 days of hospitalization due to clinical improvement with the following studies: Blood chemistry, Glucose 87, urea 12, BUN 5.9, Creatinine 0.5, BUN/CREA ratio 11.5. Liver Function Test: Total bilirubin 5.9, direct bilirubin 3.8, indirect bilirubin 2.09. ALT 897 U/L (Normal values 7-36), AST 749 U/L (Normal values 10-35), Total proteins 4.4, Albumin 2, Globulin 2.3, A/G ratio 0.9. Lactic dehydrogenase 246 (Normal values 130-500). Coagulation tests: Partial thromboplastin time 30 (Normal values 22-41), Prothrombin time 15 (Normal values 9.2-12), INR 1.5. On the other hand, the laboratory studies of the newborn were CBC: leukocytes 12,600, neutrophils 66% (6400), lymphocytes 14.2% (1800); hemoglobin 13.5 g/dL; Platelets 293,000 mm3 Liver function tests: ALT 10 (Reference value 7-36), AST 27 (Reference value 10-35), alkaline phosphatase 116 (Reference value 43-115). Total bilirubin 6, Direct bilirubin 0.7, indirect bilirubin 5.3. He was discharged due to favorable clinical progress at 72 hours of life.

Discussion

HAV infection is one of the many causes of infectious hepatitis in the world population; it is a single-stranded RNA virus and belongs to the *Picornaviridae* family. The infection is characterized by generating inflammation of the liver, the virus can be transmitted to an unvaccinated and obviously to an uninfected person, mainly through the fecal-oral route, by ingesting contaminated water and/or food (with feces), with direct contact with a sick person or by oral-anal sex [4]. The incubation period is from 15 to 50 days with an average of 28 days, and its clinical picture is indistinguishable from other types of acute viral hepatitis [5]. This case has an epidemiological precedent of street food and beverage consumption and having been in close contact with his partner who had hepatitis confirmed a month earlier, but who made a complete clinical recovery. Considering that viral dissemination lasts 1-3 weeks, and that our case began her ailment 25 days after his partner suffered from HAV infection, it is very likely that she became infected with it.

In Mexico, like other developing countries, up to 90% of the child population under 10 years has been infected, from 1990-1999, a total of 217,513 cases of viral hepatitis were reported in the country, from which 85.3% corresponded to VHA. The clinical manifestations depend on the age of contagion, for example, in children, approximately 30% present symptoms vs. 80% in adults, who are asymptomatic. Remember that HAV infection causes natural immunity [6-7]. It is important to note that our case presented the clinical manifestations 5 days before the interruption of pregnancy, that is to say, the incubation period must have occurred between weeks 35 and 36 of gestation due to exposure of close contact to her partner who suffered from hepatitis. In this regard, there is very little information on HAV infection during pregnancy; however, any susceptible person who has not been vaccinated or is exposed to the virus can become infected. When this occurs, it may have a benign evolution, although complications such as threat of preterm labor, placental abruption, premature rupture of membranes, clinical cases of meconium perforation and perforation of the distal ileum in the product have been described (reporting in these cases, the need of surgical management at birth) [8-11].

Despite the fact that the virus has been described capable of crossing the placenta, acute infection has not been demonstrated in the newborn of mothers with active disease, regardless of the trimester of the first infection, nor even the route of birth or breastfeeding, as such, there is no evidence in the

scientific medical literature that if HAV crosses the feto-placental barrier it could cause acute infection in the fetus; therefore, there is no risk of congenital malformations associated with pregnancy, and breastfeeding is not contraindicated [11-14]. It is important to note that once the pregnancy was disrupted in the adolescent, the evolution was of complete improvement, and the neonate (who in this case was born full-term and eutrophic), did not have any subsequent complications with paraclinical tests such as: blood count and blood tests. liver function, which were reported within normality. And as stated within the little medical literature that exists on the matter, no increase in mortality was observed for the pair due to infection associated with HAV [15].

In the immediate postpartum period, the adolescent was isolated with standard and universal excreta precautions, because when the virus enters the host (in this case, one pregnant women), it survives stomach and intestine secretions, reaches the liver parenchyma and is phagocytosed by the hepatocytes where the virus is replicated. When the viruses reach the bile canaliculi, the viral load in feces can reach up to 108 virions per milliliter, which explains fecal-oral transmission and the possibility of detecting the virus in feces during the incubation period and therefore the risk of transmission to other pregnant women, newborns in nurseries, and hospital staff who interact with said patients [16-17]. Despite the availability of vaccines against hepatitis "A", which includes pregnant women, it is still a common disease in low-income countries with poor sanitation and overcrowding, especially in pediatric ages [18-19]. In Mexico, there are 3 inactivated vaccines available, which depending on the type of vaccine (simple or combined with hepatitis-B) 2 or 3 doses are applied; and their main recommendation is for children, however, these vaccines are not included in the National Vaccination Record and are only applied at the private level. And for adolescents and adults, our country also has three vaccines, following the same scheme as the pediatric age of 2 or 3 doses, depending on whether it is only to prevent hepatitis "A" or to prevent both "A and B". Remember that the diagnosis is made by detecting IgM antibodies against HAV and the treatment is conservative and/or symptomatic [20-23].

Conclusion

We report an unusual or not so frequent case of a pregnant adolescent with a risk background of hepatitis "A" infection due to consuming street food and drinks, and being in direct contact with a partner with a history of having suffered the disease. In addition to the symptoms: general malaise, fever, nausea, vomiting and jaundice, the treating doctor must take into account requesting transaminases, prolonged clotting times and serology for hepatitis study, which in our case, both the transaminases and the times coagulation levels were normal, and the diagnosis was confirmed through the detection of IgM against hepatitis A. It is important to mention that in Mexico hepatitis "A" infection has a high incidence in schoolchildren and adolescents and therefore, Vaccination is the gold standard of prevention, and whenever possible it must be administered before exposure.

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Cite this article: Mejía J P Y, Arcos M V, Betancourt A C, Arenas E G, Lorenzo J de J C, et, al. (2024). Hepatitis a in Pregnant Adolescents: Case Report. *Journal of Women Health Care and Gynecology*, BioRes Scientia Publishers. 4(1):1-4. DOI: 10.59657/2993-0871.brs.24.059

Article History: **Received:** July 16, 2024 | **Accepted:** August 03, 2024 | **Published:** August 12, 2024