

CASE REPORT

Crimean-Congo hemorrhagic fever and pregnancy: Two cases

Fazilet Duygu¹, Ayşegül Çopur Çiçek², Turan Kaya³

¹ Abdurrahman Yurtaslan Oncology Teaching Hospital, Dept. of Infectious Diseases and Clinical Microbiology, Ankara, Turkey

² Recep Tayyip Erdoğan University Medical School, Department of Clinical Microbiology, Rize, Turkey

³ Tokat General Hospital, Department of Infectious Diseases and Clinical Microbiology, Tokat, Turkey

ABSTRACT

Crimean-Congo Hemorrhagic Fever (CCHF) is a viral zoonosis, transmitted to humans by either: the Hyalomma species of ticks; or by direct contact with body fluids or tissues of infected humans or domestic animals. CCHF can result in death through clinical progression of hemorrhagic fever (1). Tokat Province in Turkey is where CCHF cases are seen at the highest rate.

In this article, the cases of two pregnant women are discussed. The women applied in Tokat with a fever and were diagnosed with CCHF. Along with symptomatic treatment, thrombocyte and fresh frozen plasma replacement was performed in one of the patient's cases. Patients were discharged with recovery. The main purpose of this article is to enlighten the progression of CCHF during pregnancy. *J Microbiol Infect Dis* 2015;5(1): 29-31

Key words: Crimean-Congo hemorrhagic fever, pregnancy, Tokat

ÖZET

Kırım-Kongo kanamalı ateşi ve gebelik: İki olgu

Kırım-Kongo kanamalı ateşi (KKKA) Hyalomma türü kenelerle, enfekte insanlar ya da evcil hayvanların vücut sıvıları veya dokularıyla doğrudan temas sonucu insanlara bulaşan, kanamalı ateş tablosu ile ölüme neden olabilen viral zoonotik bir hastalıktır. Türkiye'de KKKA olguları en fazla Tokat'ta görülmektedir.

Bu yazıda, Tokat'ta ateş şikâyetiyle başvuran, KKKA tanısı konan iki gebe hasta değerlendirildi. Hastaların birine semptomatik tedavi olarak trombosit süspansiyonu ve taze donmuş plazma verildi. Her iki hasta da iyileşerek taburcu edildi. Gebelik süresince KKKA gidişatının aydınlatılması amaçlandı.

Anahtar kelimeler: Kırım-Kongo kanamalı ateşi, gebelik, Tokat

INTRODUCTION

Crimean-Congo hemorrhagic fever (CCHF) is a viral zoonosis, which may progress into fatality. The etiological agent is the CCHF virus belonging to Nairovirus family of Bunyaviridae species. It is reported that the rate of incidence of the disease, already encountered in more than 30 countries all over the world, has increased recently, especially in Asia and Europe.^{1,2} The clinical progression of the disease is the sudden onset of fever, headache, widespread muscle pains, fatigue, nausea, vomiting, and skin and mucosal hemorrhages of various degrees after the 3-7 day incubation period.^{3,4}

Crimean-Congo hemorrhagic fever can be encountered in all age groups. While the disease progresses with a mortality of 5-30% in adults, the progression is milder in children.⁵ Mortality rate was found to be 5% in the adult CCHF patients in the region of the study.

Progression of CCHF in pregnancy is not known definitely, due to an inadequate number of studies of the disease during pregnancy. We believe that discovering the progress and intra-uterine effects of CCHF during pregnancy will be helpful in casting appropriate medical treatment for pregnant patients. We aim to investigate the disease progression in pregnant women diagnosed with CCHF.

Correspondence: Ayşegül Çopur Çiçek, Recep Tayyip Erdoğan University
Faculty of Medicine Department of Medical Microbiology, Rize, Turkey Email: acopurcicek@gmail.com

Received: 12 September 2013, Accepted: 13 October 2014

Copyright © Journal of Microbiology and Infectious Diseases 2015, All rights reserved

CASE 1

A 25-year old female patient applied with complaints of high fever, loss of appetite, and nausea. The patient was in the 17th week of her pregnancy. She was dealing with livestock and had no tick contact history. In her physical examination, fever was 39.5°C with hyperemia of face, conjunctiva and oropharynx.

CCHF PCR on the serum sample was tested in Refik Saydam Hygiene Center (RSHC), and reported as positive. The patient received symptomatic treatment and the thrombocyte count decreased to 17000/ μ l after admission to hospital. Obstetrical ultrasonography revealed no pathological finding. She was examined by a gynecology and obstetrics specialist and there was no abnormal finding. The patient was infused with 8 units of random thrombocyte, 2 units of thrombocyte apheresis, and 6 units of fresh frozen plasma. In the follow ups, microscopic and macroscopic hematuria was observed, but there was no vaginal bleeding. The patient complained of nausea during the first 3 days, and her temperature returned to normal on the Day 3. Fatigue and loss of appetite continued until she was discharged. Hyperemia in her face, conjunctiva, and oropharynx decreased in intensity and disappeared on Day 7. While the clinical progression was recovered during her follow ups, she had WBC: 7500/ μ l, Hb: 9.2 g/dl, and thrombocyte: 143,000/ μ l. She was discharged on the tenth day of her hospitalization. Patient gave birth to a healthy baby via spontaneous vaginal delivery, after which it was observed that both her physical and mental conditions were normal.

CASE 2

A 22-year old female patient admitted to hospital with complaints of high fever and nausea during the 20th week of her pregnancy. She had a tick bite on her arm three days prior to experiencing symptoms. In her physical examination, fever was 39°C with mild hyperemia on her face, conjunctiva, and oropharynx.

CCHF PCR in the serum sample tested positive for RSHC. In the follow ups, her fever was persisted; WBC was 3400/ μ l, and thrombocyte count was 60,000/ μ L. There were petechial rashes in her legs. Obstetrical ultrasonography findings showed no pathologic finding. Gynecology and obstetrics specialist did not suggest any additional recommendation. The patient was treated symptomatically. Blood and blood product transfusions were

not required. During the follow ups, her temperature returned to normal ranges, the clinical progression became totally normal and the patient was discharged with recovery on day 10 of her hospitalization. Patient delivered a healthy baby via spontaneous vaginal birth. After delivery, it was observed that conditions were normal.

DISCUSSION

Tokat Province in Turkey is an endemic region for CCHF and most cases occur in this area. In 2011, two pregnant women diagnosed with CCHF were followed up in our hospital. CCHF was observed to progress more mildly in these cases. Both patients were fully recovered and discharged. During their follow ups after the discharge, their clinical and laboratory values were all within normal limits. Dizbay et al. presented a case related to clinical progression of the disease during pregnancy. They reported that the 36-week pregnant patient received ribavirin treatment, and she recovered without harm to the fetus. They also reported that the patient's recovery and good health of the fetus might be related to ribavirin treatment.⁶ In this present study, ribavirin was not given to the two pregnant patients, but the patients recovered by only using the symptomatic treatment. Horizontal transmission of the disease from mother to the fetus was shown.⁷ In the study conducted on pregnant CCHF patients by Ergonul et al.,⁸ three pregnant women were followed up, and the virus was detected in the fetus of one patient by using RT-PCR and ELISA. They also reported that one of three patients died with the fetus, whereas other pregnant patients recovered while losing their fetuses. Moreover, they indicated that the disease might cause abortion, neonatal complications, or death. CCHF should be differentiated from HELLP syndrome (hemolytic anemia, elevated liver enzymes, low platelet count) encountered during the pregnancy.^{8,9} Tezeret et al.,⁵ in their study on 31 pediatric patients diagnosed with CCHF, reported that all patients recovered from the disease. In addition, laboratory signs and clinical progressions of children were better than those of adults, and the disease progressed more mildly during childhood; however, some pediatric mortal cases have been reported.¹⁰ Our pregnant CCHF patients recovered because their diseases were mild in severity.

It is known that some diseases carry high risks of mortality during pregnancy, childhood, and senility. Since there were only case reports regarding CCHF during pregnancy, the impact of pregnancy

on CCHF remains unknown. In this study, CCHF has been observed to progress more mildly in pregnant subjects just as it does in children. Infection was detected in the fetus of a pregnant patient with Dengue virus infection, and it was reported that the disease could be vertically transmitted.¹¹ However, there has been no definite information about vertical transmission of Dengue virus infection, which has caused hemorrhagic fever. While positive Ig G and negative Ig M were detected in the serums of newborns of the two pregnant patients with hemorrhagic fever with renal syndrome, neither the patients nor their fetuses died.¹² In this study, no evaluation about vertical transmission of CCHF could be done, since the antibody levels could not be measured in the fetuses.

Complaints of nausea related to gestation in the Patient 1 increased with CCHF. Nausea and vomiting, which are the common complaints with pregnancy, should be carefully examined in patients who apply with fever, especially in endemic regions, and they should be tested for CCHF.

There is no definite information about the use of ribavirin, which is teratogenic, in pregnant patients with CCHF. In this study, patients did not receive ribavirin. They recovered by symptomatic treatment and blood product transfusions.

The ultrasonography of the babies was normal during pregnancy. After delivery, it was observed that both physical and mental conditions were regular. However, the blood tests (ELISA, PCR) for detection of the intrauterine CCHF infection could not be performed.

CONCLUSION

CCHF can present as mild to severe disease during pregnancy. In endemic regions, CCHF should

be considered in pregnant women, especially in the presence of thrombocytopenia and fever. Pregnant subjects diagnosed with CCHF should be hospitalized. Along with symptomatic treatment, blood and blood products should be administered to CCHF cases even during pregnancy. We have inadequate information on intrauterine transmission of CCHF.

REFERENCES

1. Whitehouse CA. Crimean-Congo hemorrhagic fever. *Antiviral Res* 2004;64:145-160.
2. Leblebicioglu H. Crimean-Congo haemorrhagic fever in Eurasia. *International Journal of Antimicrobial Agents* 2010;36:43-46.
3. Duygu F, Kaya T, Baysan P. Re-Evaluation of 400 Crimean-Congo Hemorrhagic Fever Cases in an Endemic Area: Is Ribavirin Treatment Suitable? *Vector Borne Zoonotic Dis. Vector Borne Zoonotic Dis* 2012; 12:812-816.
4. Ergönül Ö. Crimean-Kongo hemorrhagic fever. *Lancet Infect Dis* 2006;6:203-214.
5. Tezer H, Sucakli IA, Sayli TR, et al. Crimean-Congo hemorrhagic fever in children. *J Clin Virol* 2010;48:184-186.
6. Dizbay M, Aktas F, Gaygisiz U, et al. Crimean-Congo hemorrhagic fever treated with ribavirin in a pregnant woman. *J Infect* 2009;59:281-283.
7. Saijo M, Tang Q, Shimayi B, et al. Possible horizontal transmission of Crimean-Congo haemorrhagic fever virus from a mother to her child. *Jpn J Infect Dis* 2004;57:55-57.
8. Ergonul O, Celikbas A, Yildirim U, et al. Pregnancy and Crimean-Congo haemorrhagic fever. *Clin Microbiol Infect.* 2010;16:647-650.
9. Stone JH. HELLP syndrome: hemolytic anemia, elevated liver enzymes, and low platelets. *JAMA.* 1998;280:559-562.
10. Ahmeti S, Raka L. Crimean-Congo Haemorrhagic Fever in Kosovo: A fatal case report. *Virology Journal* 2006;3:85.
11. Berberian G, Fariña D, Rosanova MT, et al. Perinatal dengue infection. *Arch Argent Pediatr* 2011;109:232-236.
12. Todorović Z, Canović P, Gajović O, Mijailović Z. Hemorrhagic fever with renal syndrome during pregnancy: case report. *Med Pregl* 2010;63:280-284.