Amoebiasis in pregnant woman: A case report

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Article History
Received: 25 March 2020
Reviewed: 26/March/2020 to 29/April/2020
Accepted: 30 April 2020
E-publication: 07 May 2020
P-Publication: July - August 2020

Citation

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General Note
Article is recommended to print as color digital version in recycled paper.
ABSTRACT

Introduction: Entamoeba histolytica is belonging to the family of Entamoebidae and phylum Amoebida. There are two forms of E. histolytica – trophozoite and cyst. It is 10 to 50 µm diameter. Trophozoites ingest erythrocytes and destruct the tissue; cyst forms ulcers in the colon. E. histolytica causes amoebiasis commonly in travellers, recent immigrants, homosexual men, and pregnant women. It is found in the tropical and subtropical area and around 1 lakh people die due to amoebiasis all over the world. In India, the infection is present in most of the rural places, where the poor sanitation presents. Case presentation: A case of amoebiasis is found in pregnant women residing in villages of district nearby Wardha, in Maharashtra. Enrolled pregnant women complained about bloody diarrhea, vomiting, fever, etc. The purpose of this study is to be aware of amoebiasis infection in pregnancy due to the consumption of unhealthy water and food. In the primary level, microscopy of a patient stool sample is very useful for the diagnosis of disease caused by E. histolytica parasite. Conclusion: In this study, we mainly focus on molecular diagnostic method i.e. Real-time PCR. It affects people other than pregnant women, but it is severe in the pregnant woman because preterm delivery occurs due to amoebiasis. Due to immunodeficiency in pregnancy time, amoebiasis becomes severe in pregnant women.

Keywords: Amoebiasis, RT-PCR, Pregnant woman, Sanitation, Fecal.

1. INTRODUCTION

Amoebic infection caused by species of amoeba but among other E. histolytica caused severe infection. Approximately 0.1 billion people die due to amoebiasis from all over the world. Amoebiasis present in immigrants, traveller & immunodeficient persons, mostly in pregnant women (Constantine, Menon, and Luesley 1987). In pregnancy, there is low immunity, which invites many bacterial and parasitic infections (Blessmann et al., 2002). The transmission of the disease is caused by the consumption of contaminated water or food. Many cases of dysentery and severe abdominal pain are caused by E. histolytica. E. histolytica is a protozoan type of parasite which is found in underdeveloped and developing countries where poor hygiene and inappropriate sanitation is found. The fecal-oral route is the most common route of infection of E. histolytica by the transmission of eggs and also some reports also found in homosexual men (Khanam et al., 2019).

Human infection begins with the ingestion of the cyst of E. histolytica. Amoebiasis is amoebic dysentery can be defined as an infection caused by E. histolytica (Thow et al., 2017). In intestinal disease, there are symptoms of manifesting in several cramps, abdominal pain, watery or bloody diarrhea & weight loss (Khatib and Syed, 2019). In 1997, WHO stated the necessity to diagnose and treat all infection with E. histolytica and demand for a new diagnostic technique for faster and accurate testing. WHO defined amoebiasis is also called traveler’s diarrhea. In East Asian developed countries, amoebiasis is one of the infections found in people (Blessmann et al., 2002). E. histolytica infection produces inflammation in the gut which is suppressed colonization of Bifidobacteriaceae. The interruption of the normal gut flora induced due to infection of amoebiasis (Blessmann et al., 2002), (Tambekar et al., n.d.). Gut microbiota and host genetic factors play an important key role in the removal of E. histolytica infection. Mexico has a higher rate of infection than India, Africa, and Central and South America. Amebiasis became more dangerous in two extremes of life child and old age. Amebiasis is the third most deadly infection in the world (Billet et al., 2019).

With increasing age and late diagnosis, a 42% mortality rate is recorded in other than pregnant patients with severe amoebiasis. In antenatal women, amoebiasis is investigated more severely. Specific detection of a fragment of DNA became possible in Real-time PCR by one or two fluorescence-labeled probes during PCR. Disadvantages like False-positive results and the time-consuming process of normal PCR can be avoided by a recently developed method of Real-time PCR (Yanagawa et al., 2019). E. histolytica forms quadrinucleated cysts whose morphology is similar to the cysts produced by some nonpathogenic species of Entamoeba. DNA extracted directly from feces amplified the sequencing of PCR product is found in recent application proves the increase in the genetic universe of E.histolytica.

2. CASE HISTORY

A field survey was taken by DMIMS, Sawangi, Maharashtra. Rural area was taken for field survey, because unhygienic habits and poor sanitation are found commonly.

Patient Information

A case of 28 years old woman with 30 weeks gestation with complains about abdominal pain & diarrhea (bloody) presented to us. After examining up to 27 weeks, steady weight was noted, but all pulse, heartbeat, etc was normal. She had these complaints from
10 days. There was no complaint of fever, white discharge, and others. No significant surgical history was present. Pregnant woman enrolled in our field survey, verbal informed consent was taken from a pregnant woman. The patient gave history about last week abdominal pain, she thinks that the pain is due to last night meal and it is common. Patient history was taken by us with information of age, height, weight and other.

**Diagnostic assessment**

**Microscopy**

Collection of stool sample was done from the patient, microscopic examination of stool sample was done, eggs were seen in observation but observations were not clear.

**DNA Extraction and molecular technique**

From the same stool sample, extraction of DNA was done by using Hi-media kit and RT-PCR was performed. The sample was positive for the infection of *Entamoeba histolytica*. The 20µl reaction mixture for RT-PCR was used as follows: 1x Tag man mixture, forward primer, reverse primer, probe, nuclease-free water, DNA. RT-PCR is a molecular technique that is a more reliable and accurate technique to diagnose the disease. RT-PCR reaction curve graph is given in figure-1.

![Figure 1 Reaction curve graph of RT-PCR assay](image)

**Time line**

The regular visit to their household was done, after 7 days of observation; there was no abdominal pain and bloody diarrhea. No new symptoms were seen in woman.

3. **DISCUSSION**

Intestinal Protozoan infections are closely related to a lack of proper sanitation & environmental contamination with fecal matter. Amoebiasis is a potentially severe and life-threatening infection caused by an enteric protozoan. During pregnancy, the amebic disease appears to be more frequently associated with low immunity. An infected pregnant woman has bloody dysenteric stools with moderate abdominal pain & tenderness.

Early precise diagnosis of the patient will save a life in the case of *E. histolytica*. This disease can remain or increase from days to years after initial infection and is characterized by abdominal pain and bloody diarrhea. Meals together on a dining plate have by family members, helps to the transmission of *E. histolytica* (Khanam et al., 2019). In the case of Amoebiasis, the sexual partner has to be identified and treated to avoid recontamination (Zodpey et al., 2018). If the person did not travel to an endemic area, then also a person became a patient of amoebiasis because of contamination with eggs of *E. histolytica*. For the early detection of *E. histolytica* infection, a high sensitive molecular diagnostic method should be used to avoid unnecessary surgery and complication in the future delivery (Blessmann et al., 2002). In previous study some oral anal sexual transmission of *E. histolytica* infection has been reported (Yanagawa et al., 2019). For the control of transmission and prevention of disease, treatment of the patient is important whether symptoms are indicative or not (Thow et al., 2017). The number of false positive result can be lower by using improved molecular techniques such as RT-PCR. This is better than the result of earlier disease identification theory (Constantine, Menon, and Luesley 1987).

4. **CONCLUSION**

*E. histolytica* produced amoebiasis like disease in pregnant women living in rural and urban area where sanitation problem present. Disease is caused due to drinking un-boiled water and food. Pregnant lady have to take precaution at the time of drinking water, it will be helpful for avoidance of preterm delivery. RT-PCR was found to be more sensitive than microscopic examinations. In this case,
the patient is not a traveller or a migrant but she got infection of *E. histolytica* because of poor hygiene habits and use of un-boiled water for drinking.

**Informed Consent**

Patients inform consent was taken and signed by Patient before writing case report.

**Conflicts of Interest:** The authors declare no conflict of interest.

**Financial resource of the study**

Public Health Foundation of India (PHFI), PHRI funding Grand Number: IN-DL60331777444446P; Certificate Issued Date: 20 March 2017.

**REFERENCE**


