

**Time - 3 Hour****MM-70**

The question paper contains 3 printed page.

Q. 1. Fill in the blanks with articles.

[1*5=5]

1. I saw ____ UFO last night.
2. He is ____ UNESCO worker.
3. I teach four days ____ week.
4. She took out ____ X-ray.
5. She has worked in ____ fashion industry since she left school.

Q. 2. Complete the following conditionals clauses:

[1*5=5]

1. If it is sunny tomorrow _____
2. If you sit in the sun too long _____
3. If I were you _____
4. If I were the Prime Minister _____
5. If she had studied harder _____

Q.3. Convert the following sentences into Active/Passive voice:

[1*5=5]

1. The test tube was carefully smelled.
2. The DNA was subjected to qPCR analysis.
3. I removed the coating with alcohol.
4. It seems that someone cleaned the office on Tuesday.
5. Amy thinks that someone is reading to her son.

Q.4 Fill in the correct forms of verbs given in brackets.

[1*5=5]

1. The prevalence of social media _____ that we often find written language with variation and errors. (mean)
2. In this paper, we _____ specifically on actual written errors. (focus)
3. Researchers at Jaipur Health Institute (JHI) _____ to human rabies deaths and acute distress among families unable to obtain PEP. (alert)
4. Subsequent research _____ the burden of rabies in these communities. (estimate)
5. There _____ few studies of this issue done. (been)

Q.5. Fill in the blanks with the correct modal verb with the help of clues given in brackets.[1*5=5]

1. This medicine ____ in a cool place. (should/ought to- instruction on medicine bottle label-outside authority)
2. 'I live only a couple of minutes from the town center.' 'It ____ be handy having shops nearby.' (should/must- logical conclusion)
3. Around 2 o'clock every night, Shweta _____ start talking in her sleep. It's very annoying. (will/would- characteristic behaviors or habit)
4. When I was younger I _____ spend hours just kicking a ball around the garden. (Will/would- habit)
5. Mountain daisies ____ be yellow or red. (may/can- general possibility)

Q.6. Fill in the blanks with the correct word out of the four choices. [1*5=5]

1. This little _____ will have the creative juices flowing in no time.
(a) Doctor (b) lifesaver (c) dead (d) lifeguard
2. We all need to be _____ of what's happening around us.
(a) Good deal (b) outcasted (c) prepared (d) updated
3. There are 10,000 _____ reported from the earthquake in Japan.
(a) dead (b) accidents (c) casualties (d) people
4. Use your _____ so we'll know how to get back.
(a) Mobile phone (b) global network (c) global positioning system (d) compass
5. It's really an _____ task to finish everything in just one night.
(a) Down hill (b) uphill (c) good deal (d) hard

Q.7. Write an essay on one of the following topics (500 words) [15]

1. How can students add up to the social movement for nature's safety.
2. Does technology make people feel alone?

Q.8. Respond to the following advertisement: [15]

Wanted a Hospital Administrator for an upcoming multi-specialty hospital in the heart of Jaipur. Eligible candidates may apply to : XYZ Hospital, Vasant Vihar, Shanti Path, Jaipur-301020. The candidate will have to Supervise the floor allotted to them, coordinate activities between various departments, doctors, nurses, and other health care professionals in the hospital to provide better care patient and meet the patient and patient relatives. The candidate must possess good communication skills, and good at dealing with people.

OR

Apply to the following opportunity for a scholarship:

TMA Pai PhD Scholarships for International Students at Manipal University in India, 2018: The Manipal Academy of Higher Education is currently accepting applications for Dr. TMA Pai PhD scholarship program. Indian students are eligible to apply for this scholarship. Disciplines – Allied Health Science, Dentistry, Life Science, Medicine, Nursing, Pharmacy, Statistics, Regenerative Medicine, Public Health, Management, Information Science, Allied Hospitality Studies. To be eligible for this scholarship you must meet the following requirements: Masters degree in respective subject with 60% aggregate marks. Candidates with good academic records, publication and research experience will be given preference.

Q.9. Make an abstract for the following paper: [10]





Congenital Fatal Diarrhea in Newborns

Introduction

Microvillus inclusion disease is a rare autosomal recessive disorder of intestinal epithelium causing intractable secretory diarrhea in the first two months of life and about 140 cases have been reported worldwide till now. The authors report 2 cases of Microvillus inclusion disease (MVID) diagnosed in neonates by electron microscopy study of small intestinal biopsy.

Case Reports

Case 1 A 9-d-old term (38 wk) boy, second born to third degree consanguineous parents with birth weight of 3.5 kg and normal transition presented to authors with large voluminous watery diarrhea (about 20 times/d) since 3rd day of life. There was a history of sibling death in the neonatal period with similar illness. The antenatal period was uneventful and the antenatal scans were normal. The baby was started on exclusive breast feeding. At admission, baby had severe dehydration with cumulative weight loss of 29%. Arterial blood gas analysis showed pH of 7.28, pCO₂ of 34, pO₂ of 105, bicarbonate of 15 with base deficit of -11. Baby was resuscitated with intravenous (IV) fluids and started with antibiotics after sending septic work up which turned out to be negative. In view of family history of sibling death with diarrhea in the neonatal period, the diagnosis of congenital diarrheal disorders was considered and investigated accordingly. Investigations showed stool pH of 7, positive fat globules and negative reducing substances. Peripheral blood smear showed significant acanthocytosis. Suspecting fat malabsorption, baby was started on skimmed milk formula, but continued to have large voluminous diarrhea. With suspicion of multiple food intolerance, authors considered use of elemental formula but could not implement it due to financial constraints. Diarrhea persisted despite baby being kept nil per oral. Screening for inborn errors of metabolism was negative. Congenital ion transport disorders were ruled out as stool electrolytes were within normal limits (sodium 78 mmol/L, potassium 7.3 mmol/L, chloride 64 mmol/L, and bicarbonate 8 mmol/L). Further work up for villous disorders was considered and duodenal mucosal biopsy was done using Olympus neonatal endoscope under IV sedation and the tissue sent for light microscopy and electron microscopic studies. The baby was managed with parenteral nutrition from day 15 of life; He developed worsening of clinical status on 27th day of life with thrombocytopenia and conjugated hyperbilirubinemia and succumbed to deteriorating illness on day 31.

Light microscopy showed partial atrophy of duodenal mucosa. Electron microscopy showed duodenal mucosa with villous atrophy and crypt hyperplasia. The villous epithelium showed attenuation of the brush border, with many lysosomes and micro villous inclusions. The crypts showed Paneth cells and endocrine cells with lamina propria showing many macrophages, phagolysosomes, a few plasma cells and lymphocytes suggestive of MVID and parents were counseled about the diagnosis and its poor prognosis.

Case 2 The authors diagnosed MVID by electron microscopy of duodenal mucosa in another neonate who was a preterm (34 wk,

birth weight 2 kg), girl born of second degree consanguineous parents who presented with intractable diarrhea from 5th day of life. The baby was resuscitated with IV fluids and started on antibiotics. Septic work up was negative. Stool pH was 7 and stool fat globules turned out to be negative. Peripheral smear showed acanthocytosis. As the baby persisted to have diarrhea despite fasting, secretory diarrhea was suspected and stool electrolytes were done which turned out to be normal. Duodenal biopsy was done and electron microscopic study of duodenal mucosa showed features of MVID. During treatment, baby developed features of respiratory distress with pneumonia and succumbed to pneumonia on day 36. Genetic testing for *MYO5B* gene was done which turned out to be negative.

Discussion

MVID is an autosomal recessive life-threatening enteropathy first described in 1978 by Davidson et al. The pathogenesis is due to mutation in *MYO5B* gene which encodes for a protein, Myosin 5B involved in the recycling of endosomes. The hallmark of MVID is disrupted enterocyte microvilli and the presence of inclusion bodies. Clinical presentation is intractable, severe watery diarrhea beginning in early infancy and the complications include catheter related sepsis and cholestasis.

Antenatal and natal periods are usually uneventful. Polyhydramnios has been reported very rarely. Two different forms of MVID exist: one is the early onset MVID, starting within the first days of life and the late onset MVID (with symptoms appearing after two to three months of life). Both the cases were of early onset type. Consanguinity was seen in 30 out of 140 cases reported so far similar to present cases and the associated abnormalities like Meckel's diverticulum, inguinal hernias, renal dysplasia, absent corpus callosum, and hydronephrosis have been reported, which were not seen in present cases. The mechanism of osmotic diarrhea and acanthocytes in these cases could be due to mucosal atrophy. Diagnosis can be made by histopathology with special stains and immunohistochemistry (CD 10, PAS and Villin) but electron microscopy remains the gold standard test. Unique *MYO5B* mutations have been reported with MVID, which disrupts epithelial cellular polarity. And about 41 unique *MYO5B* mutations have been reported. Genetic mutation could not be done in one case because of financial constraints. MVID contributes to 7% of all pediatric small bowel transplantations worldwide with overall 5-year survival rate of 50%.

The reason for reporting these cases is to suspect this rare disorder in newborns presenting with intractable diarrhea after ruling out carbohydrate malabsorption, multiple food intolerance, and congenital sodium and chloride diarrhea. Diagnosing this condition would help in counselling the parents about the prognosis and in genetic counselling for future pregnancies.