

### Correspondence

To the Editors

## Cytomegalovirus in biliary atresia

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(Key words: Cytomegalovirus, biliary atresia)

We read with much interest the article by Mukherjee et al<sup>1</sup> in the recent issue of your journal as it addresses a yet unresolved controversy of the aetiology of biliary atresia (BA). We would like to make a few comments which are expected to benefit the general readers of the journal.

Firstly, the diagnosis of perinatal cytomegalovirus (CMV) infection in the newborn is established by detecting the virus in body fluids through polymerase chain reaction, culture, or antigen testing within the first 3 weeks of life. The finding of CMV antibodies or viral deoxyribonucleic acid after 3 weeks makes it difficult to differentiate congenital from postnatally acquired infection<sup>2</sup>. Therefore, one should be very cautious in diagnosing perinatal CMV infection in the described cases as all of them were tested much beyond this time period. Nevertheless, the authors also could have looked for other systemic manifestations (e.g. sensory-neural hearing loss, abnormalities in neuroimaging, etc.) of CMV infection in these infants to support the diagnosis.

Secondly, the authors speculated that the poor outcome in their patients could be related to the CMV infection. But while looking at the prognosis of cases of BA, one would have to look at the already established prognostic factors such as timing of portoenterostomy, extent and type of atresia, histological features such as ductal plate malformations, cystic dilatation of intrahepatic biliary system, bile lake formation and splenic malformation<sup>3-5</sup>. Except for the time of surgery, none of these other variables are taken into consideration in these patients.

Thirdly, the child in “Case 1” presented at 3 months of age with BA and the authors chose to treat him with Gancyclovir which is not an established therapy for the same. This actually delayed surgery (Kasai portoenterostomy) by another 3 weeks. As the age at surgery is known to be one of the most important determinants of its outcome<sup>4</sup>, the delay in surgery does not seem to be justified.

Fourthly, Chardot C, et al.<sup>3</sup> noted that the five year survival rate in patients operated even after 90 days of age was 25±6.1% whereas in those in whom surgery was withheld, only one patient survived till

five years. In this context, it is not clear why the child in “Case 4” was not offered surgery and instead again was subjected to a non-standard intervention in the form of Gancyclovir therapy.

Fifthly, the child in “Case 3” presented late with cirrhosis of liver and she was offered “only supportive management” and died after 1 month. In cases of BA with cirrhosis and portal hypertension, liver transplantation has been found to provide almost 90% chance of achieving normal life<sup>4</sup>. Notwithstanding the barriers to liver transplantation in a developing country<sup>5</sup> setting, it is very difficult to understand the reason behind not offering the option of liver transplantation in this child.

### References

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\*Anirban Mandal<sup>1</sup>, Puneet Kaur Sahi<sup>2</sup>

<sup>1</sup>Consultant, Department of Paediatrics, Sitaram Bhartia Institute of Science and Research, New Delhi, India, <sup>2</sup>Senior Resident, Department of Paediatrics, Kalawati Saran Children's Hospital, New Delhi, India

\*Correspondence: anirban.nrs@gmail.com

#### Response by authors of article

To the Editor,

In response to the first comment, all the patients presented within 2-4 weeks of age. We have not classified them into congenital/perinatal or acquired CMV infection<sup>1</sup>, as we are aware of the presentation of Case 1 and 2 at 3 weeks, case 3 at 4 weeks and case 4 at 2 weeks. Three of the babies underwent testing on presentation within 3 weeks and only 1 was tested beyond the 3 week window. All the babies underwent hearing evaluation and were not diagnosed to have sensori-neural hearing loss as has been mentioned in the text.

In response to the second comment, available literature is yet to conclusively confirm whether CMV is coincidental/causal for biliary atresia as has been mentioned in our discussion. We do understand the concerns of the author while looking at the prognosis of cases of BA.

In response to the third comment, the child was diagnosed to have CMV (high viral load) and BA. Valgancyclovir is known to have a role in symptomatic CMV infection<sup>2</sup>. With a dual pathology, there was a dilemma regarding what to treat first. The baby also had deranged coagulation parameters which needed normalizing before attempting a major surgery. Also Chardot et al<sup>3</sup> have stated in their findings that patients who were operated beyond 90 days of age have a survival rate of 25%±6.1%.

In response to the fourth comment, surgery was offered to her, but she was unfortunately lost to follow up.

In response to the fifth comment, liver transplant in the paediatric population was not available in Eastern India. Her case was discussed with 2 centres which offer the same. However she deteriorated significantly before her transfer could be arranged and it was therefore not possible.

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\*Devdeep Mukherjee<sup>1</sup>, Ritabrata Kundu<sup>1</sup>, Prabal Niyogi<sup>1</sup>, Joydeep Das<sup>1</sup>

Department of Paediatric Medicine, Institute of Child Health, Kolkata, West Bengal, India

\*Correspondence: devdeep\_dm@rediffmail.com