Author's response to reviews

Title: Treatment of hepatic encephalopathy by on-line hemodiafiltration: A case series study

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Author's response to reviews: see over
February 1, 2010
Dear Editor of BMC Emergency Medicine:

Thank you for considering our paper. And we thank for your detailed reviewing and the comments deeply. My coauthors and I submit the revised manuscript.

We changed a title as “Treatment of hepatic encephalopathy by on-line hemodiafiltration: A case series study” according to the advice.

We described in detail about 8 patients who were excluded. But we could not compare their data with those of study patients, because of too small sample. We show the data of 8 patients who were excluded below for your information.

Changes of NH3 in 5 patients with congestive heart failure
Changes of total bilirubin in 5 patients with congestive heart failure

Changes of NH3 in 3 patients who died due to MOF
Changes of total-bilirubin in 3 patients who died due to MOF

We describe what happened to case 6 in detail in the text.
We tried an analysis of changes in biochemical measurements, but we found the data was influenced by treatment, especially plasma exchange. We found that biochemical data did not show the effects of on-line HDF directory, especially in coagulation function. We added presentation of the changes in ammonia and bilirubin during the treatment according to your advice (Fig. 2).

We added presentation of the changes in ammonia and bilirubin as mentioned above. But, we could not compare the data between survivors and non-survivors. Because, the treatment was continued in non-survivors until give up, as a result, the data of non-survivors were influenced by treatment strongly.

A purpose of this study is to inspect utility of the liver compensation treatment as a blood purification therapy for a patient in whom the liver function was abolished. The study was not designed to examine the impact of our ALS on survival. For this purpose, it is most useful to report clinical course in patients in whom liver function was completely abolished. In patients #14, #16, final liver volume and pathological findings could be presented. Their liver function was obviously completely abolished proven by clinically and pathologically, whereas liver function of patients with spontaneous survival was estimated by only biochemical measurements and CT examination. We thought that their liver function may be not completely abolished even in the early phase of illness. So the improvement of their consciousness may not show the impact of our ALS.
only. Furthermore, as mentioned above, it is difficult to compare the biochemical measurements between those of spontaneous survivor whose treatment reduced day by day and those of non-survivor or the patients who receive transplantation whose treatment was continued at full strength until give up or transplantation.


We revised statistical processing thoroughly in consultation with the statistician. As for the revised statistics processing and results, it was confirmed that these were correct by the statistician.

We added “(mean ± SD)” on first usage in abstract. We revised computed tomography to computerized tomography, and also revised title of table 2 according to the advice.

We revised legend of figure 3 according to the advice.

There are many studies about ALS, however reliable river support was not established yet. We think that it is useful very much to report our experience.

As to “I would like more assurance that this group really has acute liver Failure”; In patients #3, acute hepatitis B infection was proven by virus marker (IgM-HBc positive). He had an suspicious sexual episode, and normal liver function had been confirmed by examination of health check every year before admission. And AST at the time of the admission was 6,430, and it decreased rapidly. On-line HDF was started 5 days after admission. Our ALS improved his consciousness, but his own liver function was abolished rapidly, so he died after
discontinuation of our ALS. Final his liver volume estimated by CT was 467 mL. A patient #11 had history of alcohol abuse two days before onset. Virus markers, autoimmunity abnormality, sexual episode were not found. Of course, there was not episode of the acetaminophen over dose or suicide attempt. His normal liver function was also confirmed health check before admission. Acetaminophen is the one of few causes of ALF in Japan. Although the evidence that it caused by alcohol abuse was not provided, a diagnosis of the acute liver failure is clearly correct.

Supplement

As for case 4,15,16 in whom AST at the time of start of ALS was low, the maximum of recorded AST of case 4,15,16 was 11800, 227, 84 each. They admitted our hospital 17, 60, 9 days after onset respectively.

We promise that we have proper clinical data to judge to be acute liver failure as mentioned above.

The amount of substitution fluid of our method is much different in comparison with the those of the previous method. We described the setting of blood purification in detail in the text, and we revised to emphasize a difference with the conventional treatment at the point of the amount of substitution fluid in the text. In conclusion, we specified that this effect had been confirmed only in our 16 patients, and we revised the predicable expression. I hope an opportunity to publicize that a large amount of filtration is useful is given.

We revised to explain the difference between HBV and HBV carrier in the text according to the advice. We also revised “HBV” in table 1 to “HBV acute infection”.

We think that we could cope with your concerns point by point. We hope that you will find our revised manuscript suitable for publication in your journal and look forward to hearing from you.

Sincerely yours,
Shinju Arata