Reviewer's report

Title: Budd-Chiari Syndrome: Long term success via hepatic decompression using transjugular intrahepatic porto-systemic shunt

Version: 1 Date: 28 July 2009

Reviewer: Martin Rössle

Reviewer's report:

The study contributes to the present knowledge on Budd-Chiari Syndrome and its treatment by intrahepatic shunt. Most of the results are, however, not new and are similar to those published previously. The inclusion of transplanted patients treated in the same institution and during the same time frame is helpful to compare treatments and their complications although patients may differ and have not been randomized. In this regard it would be interesting to have more detailed information on the two groups of patients.

Major revisions:

1. Obviously, TIPS patients had a somewhat better survival than transplanted patients although the sample size of the latter is too small to draw a meaningful conclusion. In contrast to the information in the text (abstract and results), the life table analysis does not show a difference between the 2 groups. The reduction in survival probability by 25% is true for the LTX group (1 of 4 pts) but not for the TIPS-group. If 1 of 13 pts died the reduction in survival is 7.7% and not 25%!! Please correct the Kaplan-Maier analysis.

2. Introduction last para:
I disagree with that statement. There are numerous large studies published with clear surgical or interventional approach. It is true that recommendations are from retrospective studies. However, the present study is also a retrospective one and provides new information only in a quantitative but not qualitative aspect. As always, institutional experience is important. However, at least in Germany, transportation of a patient to a specialized center may not be a greater problem. I suggest to drop the paragraph.

Patients and Methods

3. Second para:
The statement is vague. Which anatomic variation do you mean? Extended thrombosis may even be a reason for interventional treatment and against LTX. Impaired liver (and renal) function may, as we learned, improve within days after TIPS. I could imagine that allocation to treatments was mainly due to the time of presentation which should be given in Table 1. The study begun in 1988! At this time TIPS was just introduced and the BCS was not seen as an indication for TIPS. Patients were likely to be treated by LTX. In contrast, after the first
publications in the mid 90th the TIPS gained more and more recognition which influenced decision making. If patients were really selected according to liver function or symptoms, the exact mode of selection must be given and also the patients should be characterized accordingly.

4. Third para:
It is hard to believe that patients have got only Palmaz stents and Wallstents. What is about covered stents such as Viatorr?
Why is the critical pressure gradient 10 and not 12 mmHg?

Results:
5. I miss a chapter in methods on the definition of disease severity (acute, subacute, chronic) and a respective reference. Did the severity at presentation influence the outcome? Was severity similar in TIPS patients and LTX patients?
6. The one death in the TIPS group was due to non hepatic cause. This should be stated in the abstract and results and also be discussed.

Discussion:
7. First para:
“The collective should be representative....”
Many studies had different cohorts with a much higher proportion of partial BCS (e.g. Ref 26). In many other studies the details of patient characteristics are not given. Therefore it is difficult to compare the group of patients of this study with that of other studies. The comparison of the gender distribution is not sufficient to draw such a general conclusion. Instead, the own cohort and results may be compared with one or more selected papers with a similar cohort and treatment to show that the results of the own study are reasonable.

8. Second para:
“Therefore conclusions on conservative management....”
Please replace the rest of the paragraph by the following statement:
On the basis of this very limited experience, we may confirm the value of medical treatment alone in patients with limited disease. In contrast, in the patients with severe disease or symptomatic cirrhosis, medical treatment was not effective and interventional treatment (TIPS) or transplantation had to be applied.

9. Third para:
Did you apply treatments in a stepwise manner? Had the 13 TIPS patients medical treatment long enough before the intervention? Why or when did you decide to step on to the TIPS or the LTX? This is a question which should be regarded in methods. In case that you selected patients according to their disease severity it may also be ok. In this case you should mention the present recommendation (Baveno) but state that your decision making was different.

10. Fourth para:
The use of Viatorr stents for TIPS revision should be mentioned.

11. Fifth para:
“In contrast to other studies…."
This is too general. In most studies I know, TIPS was a final treatment for almost all patients. But this may depend on the time of follow-up. One can expect that cirrhosis progresses slowly and that many of the TIPS patients may finally end at transplantation. However, the many patients with a haematological disease may die before LTX is indicated and, in these patients, the TIPS may indeed be the definitive treatment of the BCS.

12. Sixth para:
The results of LTX are discouraging appointing and need extended discussion. Many questions should shortly be addressed to explain the problem after transplantation:
1. What decided against TIPS and for transplantation?
2. The characteristics of the patients are important to estimate their overall chance of survival. Where these patients very old or did they have a number of additional diseases? Did they have additional portal or caval thrombosis? Were these patients obese, infected, comatous?
3. When was anticoagulation started after LTX and what kind of medication was given? Many TIPS patients have HIT. Could it be that this complication has been overlooked?
4. Was the center trained and experienced to treat BCS patients?

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
'I declare that I have no competing interests'