Eluding Liver Transplantation in POSTTEXT III and IV Hepatoblastoma: Extended Liver Resection is Worthwhile

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- Primary liver transplantation is recommended for central POSTTEXT III and POSTTEXT IV hepatoblastoma.
- The aim of this study is to assess feasibility, outcomes and oncological efficacy of aggressive non-transplant major hepatic resections in POSTTEXT III and IV hepatoblastoma patients in tertiary cancer referral center.

Patients and Methods

All patients presenting to our department from December 2014 till December 2017 with diagnosis hepatoblastoma were discussed in a multidisciplinary meeting and assessed for eligibility to participate in the study. Inclusion criteria included children with central PRETEXT III or PRETEXT IV. Exclusion criteria were children with PRETEXT I, II, previous surgical intervention, presence of distant metastases.

Neoadjuvant chemotherapy according to the treatment protocol of the SIOP Epithelial Liver Tumor Study Group (SIOPEL) was adopted in this study (PLADO (cisplatin 80 mg/m2 /day, doxorubicin 2 × 30 mg/m2 /day). Tumor response was assessed using a serial alpha-fetoprotein (AFP) measurement and radiological imaging.

Results:

Eighteen children with central PRETEXT III and PRETEXT IV were included in this study. 3 patients with POSTTEXT IV underwent primary liver transplantation due to estimated residual liver volume of less than 20%. Thus, 15 children (12 POSTTEXT III, 3 POSTTEXT IV) constituted the study population and underwent extended hepatic resections.

Neoadjuvant chemotherapy was given to all patients. Our protocol was to plan surgical resection after the fourth cycle of chemotherapy. Further chemotherapy was planned if the tumor was unresectable after four cycles. 11 patients showed more than 50% reduction in tumor volume after 4 cycles whereas 3 patients showed 25-50% reduction in tumor volume. Only one patient showed less than 25% reduction in volume, the latter was the child presenting with tumor rupture who underwent arterial embolization. All children showed a reduction of AFP below 1000 ng/dl before surgery (range 195–856). After 4 cycles of chemotherapy, the POST-TEXT before surgery was III in 12 patients and IV in 3 patients. The latter continued another 2 cycles.

Median tumor volume was 317 ml (range 135–546). After 4 cycles chemotherapy, POST-TEXT was III in 12 and IV in 3 patients. There was no perioperative mortality. Postoperative complications were 2 bile leaks, one temporary decompensation and one sub-phrenic collection requiring drainage.

After a median follow up of 18 month (range 7-36 month), 1 year and 3 years disease free survival was 93.3% and 73.3% respectively with 1 year and 3 years overall survival of 100% and 86.6%. Four patients developed recurrence, two of them died due to disease progression. Early recurrence within one year occurred in one patient. All four recurrences were distant; two had solitary lung metastases and were treated successfully by resection whereas the other two patients died from progression of lung and brain metastases. Median time to recurrence was 13 month (6–31 month). Until the end of follow up time, 13/15 patients are still alive, 11 of them are disease free with no signs of portal hypertension, nor liver decompensation and no one required liver transplantation.

In conclusion, for selected cases of POST-TEXT III and IV hepatoblastoma, non-transplant extended hepatic resection is a feasible approach with acceptable morbidity and mortality rates. Oncological outcomes are comparable to liver transplantation without the long-term commitment of immunosuppression and donor risk and morbidity. Complete tumor removal is mandatory to avoid relapse and accurate surgical planning is mandatory to avoid macroscopic residual disease with its negative prognostic effect.