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Simultaneous ipsilateral DSM-TACE and PVE for preoperative augmentation of future liver remnant in patients with solid liver malignancies

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Introduction : Portal Vein Embolization (PVE) is gold standard strategy to increase Future Liver Remnant (FLR). Up to 30% of patient with liver malignance still couldn't underwent surgery after PVE due to tumor progression and/or insufficient FLR regeneration during waiting period.

Methods : 9 patients with colorectal liver metastases (CRLM) and small FLR, in close proximity to FLR critical structures (portal and/or hepatocaval confluence), having more than three criteria of Fong Clinical Risk Score for CRLM were approved by Ethical Committee for Simultaneous PVE and Transarterial Chemoembolization with Degradable Starch Microspheres (DSM- TACE). For those patients, standard PVE was simultaneously followed by oxaliplatin based DSM-TACE with short-term embolic material of the whole tumor bearing liver to be resected that allowed to achieve both tumor control and postembolic infarction in liver to be removed, as a trigger of increased FLR regeneration, without biliary tree damage. Results were compared with 23 patients in control group after standard PVE.

Results : Unprecedented FLR regeneration with KGR 23.5 cc/day (range from 17.6 to 57.25 cc/day) was observed enabling extended hepatectomies within 2 weeks compared with 5weeks waiting period in control group. In all CRLM about 60% (range from 40% to 90%) necrosis was achieved. There was no severe morbidity (including PHLF) and mortality.

Conclusions : We propose method of preoperative FLR adaptation which is not only second to none in the achieving liver regeneration rate but also is the only one that allows tumor control targeting both main reasons for patient dropout during waiting period for FLR regeneration.

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