Combined chemotherapy with endoscopic Ultrasound (EUS) guided ^{32}P OncoSil™ implantation for locally advanced pancreatic cancer: preliminary results from the Royal Adelaide Hospital (RAH)

D Bartholomeusz, J Naidu, N Singhal, R Safaeian, J Zobel, W Hsieh, B Crouch, K Ho, D Calnan, A Soman and Nam Nguyen

The role of chemo-radiotherapy for pancreatic ductal adenocarcinoma (PDAC) remains controversial. This pilot study evaluated the outcome of the combined chemotherapy and Endoscopic Ultrasound (EUS) guided intra-tumour OncoSil™ implantation in patients with locally advanced PDAC (LAPC).

Methods: Patients with histologically proven LAPC, with tumour diameter of ≥ 2.0 cm to ≤ 6.0 cm, ECOG status 0-1, Karnofsky Status 80-100 were recruited over 6 months. Exclusion criteria included >1 primary lesion, or received prior chemotherapy or radiotherapy. All patients received 3 months of conventional chemotherapy with either Folfirinox or Gemcitabine + Nabpaclitaxel. Immediately after the second cycle of the assigned chemotherapy, ^{32}P OncoSil™ was injected into the cancer under EUS guidance. Tumour size and disease activity was assessed with interval CT and ^{18}FDG PET-CT. A bremsstrahlung SPECT-CT study was performed post Oncosil to confirm accuracy of implantation.

Results: Seven patients with LAPC (4M:3F; median age=65.7 (52-84) years) completed the treatment. All EUS guided implantations were successful with a mean injected volume of 1.67ml or 11.3MBq, and no activity was noted outside the pancreas on bremsstrahlung SPECT-CT. There were no complications reported immediately, 7 days, or 30 days after the implantation. Treatment was well tolerated in all subjects with reduction in pain score. Follow-up PET-CT showed a mean reduction in tumour size of 48.3% after 12 weeks, with no ^{18}FDG uptake in 6 patients and minimal residual uptake in 1 patient. In 3 (42%) patients, the cancer was downstaged to allow for surgical resection, with histologically-confirmed clear resected margins noted in 2.

Conclusions: Combined chemotherapy with EUS guided ^{32}P OncoSil™ implantation is a highly feasible, well tolerated and safe therapy for patients with LAPC. Although outcome data is promising with a 42% rate of tumour downstaging to resectable disease, further evaluation in a larger multicentre trial is warranted.