SIR-Spheres® Microspheres in Breast Cancer

The following summarises some of the key data supporting the use of SIR-Spheres microspheres in the treatment of liver metastases from breast cancer:

Retrospective case series of patients with breast cancer treated with SIR-Spheres microspheres

A retrospective study of 44 patients with unresectable liver metastases from breast cancer who were chemotherapy refractory and subsequently treated with SIR-Spheres microspheres revealed:

- the patients (mean age 57 years; range 46–72) all had bilateral lesions and liver-related symptoms prior to SIRT, and 66% had bone or nodal metastases. All had received docetaxel and doxorubicin, 31 (70%) were ER positive and had received endocrine therapy, whilst 12 (27%) were HER2 receptor positive and 10 had received trastuzumab;1
- 73% of the patients were considered chemotherapy refractory, having failed three or more regimens, with the remainder (27%) treated for liver progression during a treatment hiatus after first- or second-line chemotherapy;2
- all patients reported mild-to-moderate post-embolisation syndrome, but only 8% (17) needed hospitalisation for one night for pain control (3) or dehydration (5), with the remainder treated as out-patients. Grade 3 toxicities of nausea, vomiting and pain were present in 25% of patients. No patients required surgery;3
- there was a complete response in 11% of evaluable patients by PET imaging at 12 weeks, a partial response in 58%, stable disease in 20%, and disease progression in 11%;4
- by CT using RECIST criteria, there were partial responses in 47% of evaluable patients, with stable disease or minor response in 47%, and disease progression in 6%;5
- 38 of 44 patients were still alive (91%) at a median follow-up of 14 months – 92% surviving in the treatment-haustus cohort and 84% in the chemotherapy refractory group. Deaths were due to brain metastases (5 patients) and recurrent hepatic disease (3 patients), and survival was short (median 3.6 months) if patients did not experience a response by PET or CT. No deaths have been attributable to the procedure;6
- the authors concluded that SIR-Spheres microspheres demonstrated efficacy in treating hepatic metastases from breast cancer, both in chemotherapy refractory disease and during a treatment hiatus;1
- the authors noted that they expected these patients to show an increase in their overall survival since they have not reached their median survival even at 14 months following SIRT;7
- in comparison, 2 large cohorts of 350 and 500 breast cancer patients with liver metastases reported a median survival following diagnosis of 14–16.3 months respectively;2,8

Case series of patients with progressive liver tumours including breast cancer treated with SIR-Spheres

The interim results of an on-going case series of 51 patients with liver tumours treated using SIR-Spheres microspheres, including 20 patients with breast cancer who had failed prior chemotherapy and had progressive disease in the liver, showed:9,10

- by CT using RECIST criteria, there were 11 partial responses and 3 with stable disease in 14 evaluable patients. One patient died prior to first follow up and one was lost to follow up;2
- 3 (19%) of 16 evaluable patients with breast cancer were sufficiently down-staged for potentially curative radiofrequency ablation (RFA) to be performed successfully with complete ablation of residual tumour proven during follow up;3
- the authors concluded that SIRT is a promising liver-targeted approach for patients with otherwise treatment-refractory liver tumours;9
- in reporting the results of RFA ablation, the authors also concluded that SIRT is able to downstage liver metastases making RFA suitable and, therefore, the combination of SIRT and RFA can extend the number of patients with a complete response after minimally invasive therapy and should therefore always be taken into account for the best tailored patient care.9

References