

## **Systematic Review: Is there any evidence that Super-selective Intra-Arterial Chemoradiotherapy (IACRT) in External Auditory Canal (EAC) Tumours is beneficial over Conventional Therapy?**

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### **Purpose:**

IARCT has played a major role in targeted treatment of head and neck cancers due to the increased intratumoral drug concentrations achieved with this approach. It is proposed that super-selective IACRT may become primary therapy for external ear canal tumours due to its safety profile. However, the efficacy and benefits of IACRT over conventional surgery and radiotherapy for the treatment of early external auditory canal tumours has not been systematically determined. The objective of this review is to analyse the results from studies involving IACRT, compare them to clinical studies with surgery and radiotherapy as primary treatment modalities and perform a pooled analysis on the relative efficacy of IACRT

### **Methods**

Systematic literature searches were performed to identify clinical studies reporting treatment of external auditory canal tumors. A comprehensive search of electronic databases (i.e Web of Science, Medline, SCOPUS, Cochrane), using broad search terms, was completed. All studies involving IA chemoradiotherapy were included, and all studies with conventional therapeutic modalities were collated and analysed separately. Parameters analysed were overall disease free survival over a minimum of 2 years. In all 4 studies on IACRT, only patients with locally advanced tumours were treated. In order to gain a fair comparison, only studies on conventional therapy that included locally advanced tumours were reviewed

### **Results**

In the sum of 4 clinical studies, there were a total of 38 patients that were treated with super-selective IACRT. The cumulative results from for studies showed a mean survival rate of 60.75% over the period of 2 years. This is superior to the mean 2 year DFS of patients who were treated with conventional therapy which was 41.2% for locally advanced cancers.

### **Conclusion**

IACRT has been shown to be relatively superior to conventional therapy with respect to mean survival rate for locally advanced EAC tumour, with less postulated toxic side effects. However, more studies are needed to demonstrate this as there currently only 4 recent studies on IACRT, and all of which were performed in Japan. Proof of efficacy in locally advanced EAC tumours might encourage trials in early EAC tumours.