

## P1 SCIENTIFIC POSTER ABSTRACT

## Comparison of 3DCRT and VMAT treatment in neoadjuvant oesophageal cancer

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**Background:** Incidence of oesophageal cancer is increasing, with locoregional and distant recurrence occurring in similar proportions. The aim of neoadjuvant treatment is to improve survival by increasing curative resection and reducing recurrence. High conformity radiation techniques try to reduce toxicities without increase tumor relapse due to geographic miss.

**Methods:** We retrospectively analyzed 14 pts with non-metastatic locally advanced oesophageal cancer, treated with neoadjuvant radiation-chemotherapy between 2010 and 2017. Median age was 64 years. 6 patients received Volumetric Modulated Arc Therapy (VMAT) vs 8 with 3-D Conformal Radiotherapy (3DCRT). 66% of VMAT were inferior localisation compared to 55% of 3DCRT. Initial staging included 36% stage II and 64% stage III. The majority (72%) of tumors were adenocarcinomas and 28% squamous subtype. 8 lower location was predominant over 6 mid-thoracic. All patients had surgery evaluating MANDART regression. Tumour and patient characteristics were correlated to cancer specific survival (CSS) and overall survival (OS).

**Results:** Median follow-up was 45 months without locoregional recurrence. Despite, 57% patients developed metastasis. 3 patients had any response vs. 3 with a pCR. Minimal or absence of response had the tendency to worst CSS ( $p = 0.19$ ). 3 years CSS and OS were 50% and 35% respectively. In the univariate analysis microscopic margins and lymphovascular invasion were significant unfavourable prognostic factor in CSS ( $p \leq 0.05$ ). Planned tumor volume (PTV) and histological subtype were not associated with response. Postoperative toxicities were 1 anastomotic leak, 2 pneumonia and 1 atelectasis. 75% of complications

were observed in 3DCRT. Both radiation techniques gave similar target coverage. VMAT provide better cardiac protection in the ANOVA (V40Gy = 4%, V25Gy = 17%, mean dose = 13 Gy) compared to 3DCRT (V40 Gy = 9%, V25 Gy = 41%, mean dose = 22 Gy) with statistical significance ( $F = 0.03$ ), ( $F = 0.02$ ) and ( $F = 0.004$ ) respectively. Any differences in other organs at risk had statistical significance.

**Conclusions:** Preoperative treatment in locally advanced oesophageal cancer had high efficacy with any locoregional recurrence. 21% had a complete response providing by analogy better survival. Even though our trial has a small sample, VMAT improved cardiac-sparing without tumoral control miss.

**Conflict of Interest:** The authors declare no conflict of interest.

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