

**Purpose:** This planning study compares VMAT and static gantry, sliding window IMRT for malignant pleural mesothelioma for post pleurectomy.

**Methods:** We compared plans for a left sided (L) and a right sided case (R). Plans used clinically approved planning target volumes (PTVs) and critical organ contours. IMRT plans employed 7-8 6 MV photon beam directions over a 215° range centered on the ipsilateral lung. VMAT plans used 4 partial arcs within the same range and energy. Prescription dose per fraction was 1.8 Gy; case L went to 50.4 Gy, case R to 46.8 Gy. Planning objectives were: Lyman model NTCP for both lungs < 25%; contralateral lung, mean dose < 8 Gy; heart, V30 Gy < 50%, mean < 30 Gy; Each Kidney, V18 Gy < 33%; liver\_not\_GTV, mean < 30 Gy, V30 Gy < 50%; stomach\_not\_PTV, mean < 30 Gy; cord maximum < 45 Gy; bowel maximum < 55 Gy, D05 < 45 Gy; PTV D95 = 94%, V95 = 94%, D05 = 115%. Dose calculation was done with the AAA algorithm.

**Results:** VMAT and IMRT both met the dosimetric constraints. The VMAT MU were 887 (L) and 896 (R) and for IMRT were 1691 (L) and 2409 (R). IMRT required 14-16 fields (wide-field splitting). The delivery times were 8 minutes (VMAT) and 20 minutes (IMRT). For coverage and plan homogeneity parameters within 1.5% - 2%, VMAT better spared organs at risk.

**Conclusions:** Both VMAT and IMRT are feasible techniques for the treatment of malignant pleural mesothelioma with intact lungs, with less MU and a shorter delivery time for VMAT. Additional cases must be planned to test generality of our preliminary results.