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### **Improved Survival with interferon alpha maintenance therapy following pleurectomy/decortication and radiation for malignant pleural mesothelioma**

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**Objective:** A prospective database was analyzed for outcomes with multimodality therapy using radical pleurectomy/decortication and adjuvant radiotherapy +/- maintenance interferon alpha for malignant pleural mesothelioma.

**Methods:** 139 patients with malignant pleural mesothelioma were evaluated between September, 1997 and September, 2004. 65 patients were eligible and underwent surgery. External beam radiation therapy was started 4-6 weeks following resection and delivered by means of three dimensional conformal radiation therapy. 49 patients completed the planned procedure and postoperative radiation. A small subset of patients (11) received daily interferon alpha 2b injections up to  $2 \times 10^6$  units/m<sup>2</sup>/day as maintenance therapy. A variety of salvage chemotherapy regimens were employed but only when disease recurred.

**Results:** Of the 65 patients, 47 were male (72%) and 18 were female (28%). The mean age was 64.2 years (range 27-82). At the time of data analysis, 18/65 patients (28%) were alive. There were no postoperative deaths. The right side was involved in 40 (62%) and the left in 25 (38%). Pathology showed epithelioid histology in 39 (60%), mixed in 22 (33.8%) and sarcomatoid in 4 (6.2%). Pathologic staging revealed AJCC stages I/II in 34 patients (52.3%) and stages III/IV in 31 (47.7%). 61 (94%) patients underwent a complete resection but only 50 (79%) completed the planned radiation. Eleven patients received interferon maintenance therapy. The median overall survival from the time of the operation was 13.2 months (entire group), 17.7 mos (group completing surgery and radiation), and a remarkable and highly statistically significant  $>>20.7$  months for the group receiving interferon maintenance therapy ( $p < 0.001$ ; see figure 1). There was no difference in survival based on histology or stage of disease. Radiation was strongly associated with increased survival ( $p < 0.001$ ). The site of failure was locoregional (either pleura space, pericardium, or peritoneum) in all but two patients.

**Conclusions:** Complete pleurectomy/decortication and postoperative radiation therapy may provide similar survival to the more radical procedure of extrapleural pneumonectomy particularly in advanced stage disease. In addition, interferon alpha maintenance therapy may provide substantial improvement in survival over existing therapies. Further studies are warranted, and mechanisms of this effect are being investigated.

