Purpose/Objective(s): Previous studies have shown similar clinical outcome between single or multi-fraction (Fr) radiation therapy for MSCC patients with poor prognosis whereas patients with expected longer survival may require long course radiation therapy to prevent local failure. However, such poor risk group has not yet been clearly identified for daily clinical practice. We examined if the known predictive Tokuhashi scoring system could be adapted in MSCC patients treated with palliative radiation therapy.

Materials/Methods: A retrospective review of the treatment outcome of the MSCC patients who received palliative radiation therapy from January 2014 to May 2015 was conducted. The patients were stratified by the Tokuhashi scoring system into group 1(score < 9): expected survival < 6 months, and group 2(score > or equal 9): expected survival > 6 months. Their survival was tested against subsequent systemic therapy (chemotherapy, targeted or hormonal therapy) and other risk factors including age, primary site, visceral metastasis, baseline motor function, prior radiation therapy, radiation therapy fraction (single or multiple).

Results: The outcome of 119 patients was studied, 100 (84%) patients have already succumbed. The overall median survival was 55 days (range 4 to 576 days). 93 patients (78.2%) belonged to group 1. The median dose delivered was 25 Gy in 5 Frs (range: 7 Gy in 2 Frs to 40 Gy in 10 Frs<10 cauda equina>). Only 9 patients (7.6%) received single-fraction radiation therapy, all belonging to group 1. Patients belonging to Tokuhashi group 1 had shorter median survival than group 2: 49 and 108 days respectively (P = 0.02). Among all the patients, subsequent systemic treatment (Hazard ratio [HR] = 0.354, 95% CI 0.194-0.647, P = 0.01) and non-visceral metastasis (HR = 0.593, 95% CI 0.363-0.968, P = 0.037) were associated with better survival in multivariate analysis.

Conclusions: MSCC comprises of a very heterogeneous group of patients, even under the Tokuhashi grouping, systemic therapy or visceral metastasis may be more important prognostic factors. Further studies are necessary to better select the poor risk group. In clinical practice, single-fraction radiation therapy could be considered in Tokuhashi group 1 patients due to expected short survival, especially those without reasonable systemic treatment options.