DETECTION OF CIRCULATING TUMOR CELLS IN HIGH-RISK ENDOMETRIAL CANCER

Objectives: Circulating tumor cells (CTCs) have been described as marker of tumor biology in several solid cancers. The data on endometrial cancer (EC) on the topic are extremely limited. The aim of this study was to evaluate the presence of CTCs in high-risk EC patients.

Methods: Patients with preoperative diagnosis of grade 3 EC, undergoing surgery at Mayo Clinic, Rochester, MN, between June 2010 and December 2011 were prospectively included. Their preoperative blood samples were tested for the presence of CTCs with the immunomagnetic and immunofluorescence assay technique. The detection of ≥2 CTCs was considered to be positive. Associations with positive CTCs were evaluated using the Fisher's exact test.

Results: Among 28 patients with preoperative diagnosis of grade 3 EC, 7 and 21 were endometrioid and non-endometrioid, respectively. Two (7%) patients had positive CTCs in their blood. Both patients had an endometrioid histology with deep myometrial invasion (MI >50%) and positive lymph nodes. The presence of positive CTCs was significantly correlated with myometrial invasion (33% vs. 0% for MI >50% vs. ≤50%, p=0.04) and lymph node positivity (40% vs. 0% for positive vs. negative nodes, p=0.03). Only patients with endometrioid histology had positive CTCs (29% in endometrioid vs. 0% in non-endometrioid, p=0.06).

Conclusion: The presence of positive CTCs is associated with deep myometrial invasion and lymph node positivity and it is observed only in patients with endometrioid cancer. The absence of CTCs in patients with type II histology suggests the need to find other markers in this subgroup of patients.