

Ki-67 immunostaining and its correlation with microvessel density in patients with multiple myeloma

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This study was conducted on 30 patients with newly diagnosed multiple myeloma (18 males and 12 females, median age 55 years). Proliferative activity of myeloma cells was analyzed by Ki-67 antibody and correlated with Microvessel density (MVD) as assessed by CD34, plasma cell number, morphology, stage of disease, renal function, hematological and biochemical parameters. Clinical staging was done according to Durie Salmon criteria (13 patients were in Stage I, 5 were in Stage II, and 12 were in Stage III). Ki-67 positivity was significantly higher ($p < 0.0001$) in patients (range 35-80%, mean 60.1%) than controls (range 8-25%, mean 18.1%). Ki-67 positivity increased progressively with increasing stage of myeloma. MVD was expressed as MVD/hpf and MVD/mm², MVD/mm² was significantly ($p < 0.0001$) higher in patients (range 62-237/mm², mean 178.0/mm²) than controls (range 5.2-50/mm², mean 18.3/mm²). Ki-67 correlated significantly with MVD ($r = 0.729$, $p < 0.001$) and percentage of bone marrow plasma cells ($r = 0.383$, $p < 0.005$). Ki-67 showed a statistically significant negative correlation with Hb, RBC count, platelet count, serum albumin and positive correlation with blood urea and LDH. MVD correlated significantly with percentage of plasma cells ($r = 0.464$, $p = 0.010$). MVD showed a statistically significant negative correlation with Hb, RBC count and positive correlation with B urea, LDH, S creatinine, β_2 microglobulin and skeletal lesions. Ki-67 and MVD were significantly higher in patients with diffuse pattern of infiltration of plasma cells as compared to those with nodular and interstitial pattern. Ki-67 is useful for determining proliferative activity and both Ki-67 and MVD are indicators of poor prognosis in myeloma.

Biography

Himani Bhakhar has completed her MBBS in 2008 from Pt B D Sharma PGIMS, Rohtak MDU University, Haryana, India and pursuing MD pathology 3rd year from University College of Medical Sciences & Guru Teg Bahadur Hospital, Delhi, India.

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