The Incidence and Impact of Thrombocytopenia in Myelodysplastic Syndromes

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Thrombocytopenia and platelet dysfunction contribute to hemorrhagic complications in the myelodysplastic syndromes (MDS). Reliable data regarding the frequency and consequences of thrombocytopenia in MDS are lacking. An extensive literature review indicated that the prevalence of thrombocytopenia (platelets<100x10(9)/L) in MDS ranged from 40% to 65%; the median frequency of thrombocytopenia prior to any MDS therapy was 65% (range, 23-93%). A retrospective review of patients who were referred to the University of Texas M. D. Anderson Cancer Center (MDACC) identified 1605 of 2410 patients (67%) with thrombocytopenia at referral. Of these, 1756 patients were classified using the International Prognostic Scoring System (IPSS), and 896 patients (51%) had intermediate-2 or high-risk disease. Treatment-related thrombocytopenia was observed in studies that involved azacitidine, tipifarnib, decitabine, lenalidomide, sirolimus, and combination chemotherapy with idarubicin, cytarabine, and topotecan. The reported incidence of hemorrhagic complications in the literature ranged from 3% to 53%, and the frequency of hemorrhagic deaths ranged from 14% to 24%. At MDACC, 460 patients had a coded cause of death: hemorrhage as a contributory cause of death, 20%; hemorrhage as the only cause of death, 10%. Thrombocytopenia was common in MDS, and there was an increased prevalence in higher risk IPSS categories. Many approved and investigational MDS therapies caused or exacerbated preexisting thrombocytopenia. The incidence of severe bleeding in MDS was greater than reported in current guidelines.

Cancer. 2007 May 1;109(9):1705-14.