The pathogenesis of spontaneous intracranial hemorrhage in patients with hematological malignancy

Johns Stephen Batchelor
Central Manchester Foundation Trust, England

Spontaneous intracranial hemorrhage is a well recognized complication in patients with hematological disease. Intracranial hemorrhage is the second leading cause of death in patients with acute myeloid leukemia. The reported mortality is over 50% for patients with hematological malignancy and spontaneous intracranial hemorrhage. The reported incidence of spontaneous intracranial hemorrhage appears to be slightly higher in acute myeloid leukemia (AML) and chronic myeloid leukemia in blast crisis than in other forms of hematological malignancy. The distribution of ICH is as follows: intraparenchymal hemorrhage accounts for about 60% of the reported case series. The remaining sites are distributed between the cerebellum, brainstem, basal ganglia, subarachnoid, subdural, intraventricular and epidural regions. Over 50% of patients will having more than one intracranial bleeding site on CT. Previously proposed risk factors for spontaneous intracranial bleeding include: Direct invasion by tumor cells, invasive intracranial sepsis, hyper leukocytosis and coagulopathy. Abnormalities of clotting include DIC, thrombocytopeina and prolonged prothrombin time. Coagulopathy and thrombocytopenia are probably not the main factors responsible for spontaneous intracranial hemorrhage in view of the fact that neither platelets nor clotting factors are responsible for maintaining cerebral vessel integrity under normal physiological conditions. Cohort studies from patients with idiopathic thrombocytopeina have shown a poor correlation between platelet count and the risk of spontaneous intracranial hemorrhage in both adults and children. Batchelor has shown that coagulopathy in patients with traumatic intracranial bleeding increases the risk of progressive hematoma progression by an odds ratio of 6.176 (95% CI: 4.727-8.069). This paper aims to explore other factors which may account for spontaneous ICH in patients with hematological malignancy.

Biography

Johns Stephen Batchelor is currently a Consultant in Emergency Medicine at Central Manchester Foundation Trust, England UK. He is also Honorary Lecturer at Manchester Metropolitan University. He was graduated from Leeds University, England in 1982. He is a Fellow of the Royal College of Surgeons of Ireland and Fellow of the Faculty of Emergency Medicine of England. He undertook his MD thesis at University College London. He has written extensively on the subject of minor head injuries. His current research interest lies in the area of risk factors for intracranial hemorrhage in both adults and pediatrics secondary to coagulopathy and thrombocytopenia.

johnbatchelor@msn.com