SOHO ANNUAL MEETING 2024

Schizophrenia and Bone Marrow Malignancy - A Distinctive Prospect Capable Of Reshaping The Future

J Jayakumar MD[1], M Ginjupalli MD[1], B Vachhani MD[1], D Nanavaty MD[1]
[1] The Brooklyn Hospital Centre, Brooklyn, New York, USA

Mount Sinai

BACKGROUND

Increased occurrence of solid cancers in schizophrenia is well researched. However, emerging evidence suggests an unusual phenomenon - schizophrenia being cured by bone marrow transplantation in bone marrow malignancies [BMM]. It was also studied that long-term use of clozapine and other antipsychotics increase the risk of BMM.

AIM

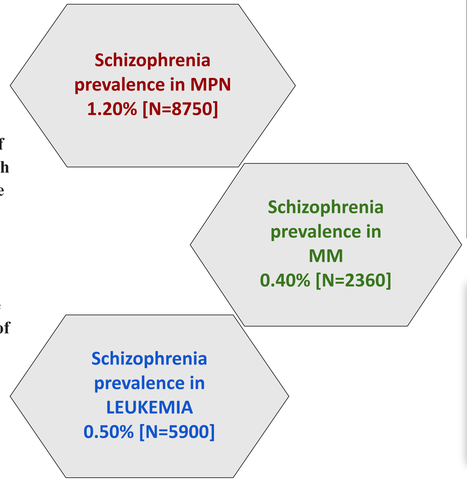
This raises multiple questions - Is there an association between schizophrenia and BMM? Is there an immune element in the pathogenesis of schizophrenia? Is schizophrenia a paraneoplastic phenomenon? In this study, we analyzed the prevalence and impact of schizophrenia in BMM.

METHODS

- National Inpatient Sample database(2016-2020) was utilized and ICD-10 codes were used to identify hospitalized patients with BMM.
- We included hospitalized patients with the three main BMM (multiple myeloma[MM], myeloproliferative neoplasm[MPN] and leukemia).
- This cohort was stratified for the prevalence of schizophrenia.
- Multivariate analysis was performed to study the impact of schizophrenia on mortality and resource utilization in hospitalized patients with BMM.

RESULTS

Prevalence of schizophrenia was 1.20% in MPN(N=8750), 0.40% in MM(N=2360) and 0.50% among leukemia hospitalizations(N=5900). Mean age of MPN patients without schizophrenia was 61.73 and with schizophrenia was 54.41(with 45.78% males). Mean age of MM patients without schizophrenia was 69.52 and with schizophrenia was 52.27(with 44.33% males). Mean age of leukemia patients without schizophrenia was 66.01 and with schizophrenia was 59.43(with 57.11% males). Schizophrenia also had higher resource utilization in BMM marked by increased mean length of stay by 3.71 days in MPN, 1.71 days in MM and 1.47 days in leukemia and increased hospital charges by 13,875$ in MPN, 1,668$ in MM and 12,116$ in leukemia. There was a statistically significant increase in mortality only in leukemia patients with schizophrenia [OR: 1.76, CI 1.48-2.04, P <0.001].



MPN with schizophrenia	Increased length of stay	3.71 days
	Increase in total hospitalization charges	$13,875
MM with schizophrenia	Increased length of stay	1.71 days
	Increase in total hospitalization charges	$1,668
LEUKEMIA with schizophrenia	Increased length of stay	1.47 days
	Increase in total hospitalization charges	$12,116

Leukemia with schizophrenia	Adjusted Odds Ratio [OR]*	95% Confidence interval	P value
Mortality	1.76	1.48-2.04	<0.001

*After adjusting for relevant confounders and various hospital and patient characteristics.

CONCLUSIONS

- Our study reflects the prevalence of schizophrenia in BMM.
- Schizophrenia portends worse outcomes evidenced by higher mortality in leukemia patients and increased resource utilization in BMM.

DISCUSSION

★ A plausible explanation for these findings could be due to the chemotaxis of hematopoietic stem cells to the brain and secretion of bioactive molecules interfering with neurogenesis.
★ Our study is based on the existing hypothesis that schizophrenia may have an immune origin and targeting the inflammation with immunomodulators or bone marrow transplantation could potentially improve outcomes of schizophrenia.
★ This could lay foundations for preeminent future research to establish causation and optimize the management of schizophrenic patients with BMM.

CONTACT INFORMATION

Jayalekshmi Jayakumar, MD
Resident, PGY 2, Internal Medicine
The Brooklyn Hospital Centre
Email: jjayakumar@tbh.org
Phone: 718-250-8000