Article published online: 2021-08-13

Significance of Detecting Minimal Residual Disease by Flow Cytometry and its Impact on Overall Survival and Prognosis of Pediatric B-Cell ALL Patient Experience from a Tertiary Care Centre in Eastern India

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Abstract

Introduction The improved prognosis of pediatric B-cell acute lymphoblastic leukemia (pBALL) is considered as a good progress of medical science in the field of oncology and hematology. Minimal residual disease (MRD) refers to presence of disease in molecular level is a newer practice with respect to the detection of complete remission by conventional pathologic analysis. Prognostic value of MRD in pediatric ALL (p-ALL) is well known.

Objectives This study was aimed to describe clinical outcomes and prognosis, that is, overall survival and relapse in the patients with pBALL with respect to minimal residual disease detection on day 15, day 29, and postconsolidations in a tertiary care center in eastern India.

Materials and Methods Eight color flow cytometry was used to detect MRD in this study. This contained markers such as CD 19, CD 34, CD 10, CD58, CD 45, CD13, anti-TDT, CD33. Eight panels included were (1) CMPO-FITC/cCD79a-PE/cCd3ECD, (2) CD20-FITC/cCD10-PE/cCd-19ECD, (3) CD34-FITC/cCD117-PE/cCd45 ECD/CD2 PC 5, (4) CD15 FITC/CD33PE/CD45ECD, (5) CD14 FITC/CD13 PE/CD45ECD, (6) HLADR FITC/CD7 PE/CD45 ECD, (7) TdT FITC/CD45 ECD (IF CD34 NEG), and (8) CD58 FITC/CD 45 ECD (IF BOTH CD34 AND TdT NEG; were used to prepare the marker.

Results The study included 52 patients. In the 52 patients, 59.6% patients are alive with a *p*-value of 0.031. MRD was checked on every 15th and the 29th day and postconsolidation of the treatment where in day 15 ($p = 0.023$), it was 53.4% positive and 46.5% negative. On day 29 ($p = 0.031$), MRD was 22.5% positive and 77.5% negative, in post consolidation, it was positive in 20% and negative is 80%. MRD value below 0.01 is taken as negative and above is taken as positive. The overall survival (OS) is of 32.88 + 8.59 with a 6 to 36 months of duration. In relapsed cases, no hemorrhagic relapse was found and two CNS relapses were found.

Conclusion It was a study of 52 patients of pBALL with a detection of MRD by FCM. MRD-negative patients had a good prognosis and comparatively lower rate of relapse than the one with positive MRD. Effort should be made to adhere to recommendation of MRD testing in clinical guidelines.

Keywords: pediatric ALL, MRD, flow cytometry, clinical outcomes, prognosis, overall survival

Psychological Status and Attitude of Breast Cancer Patients Post-COVID-19 Outbreak in Chennai: A Observational Survey Study

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Abstract

Introduction The global threat caused by COVID-19 pandemic and the unprecedented lockdown imposed had created emotional stress among the breast cancer patients with dilemma regarding risk of progression of cancer due to interruptions of standard medical care and panic about acquiring the COVID-infection during their frequent visits to the hospital.

Objectives We conducted a questionnaire-based study to assess the psychological impact in this situation affecting their quality of life and their perspective in this current situation.

Materials and Methods Breast cancer patients who had been recently diagnosed, those who were on chemotherapy and visited our OPD in the month of July during the COVID-19 pandemic were assessed for their treatment-related perspectives with a questionnaire. Psychological status was analyzed with GAD-7 (generalized anxiety disorder questionnaire) and PHQ-9 (patient health questionnaire).

Results A total of 202 breast cancer patients were included when lockdown was relaxed after a period of 3 months and COVID-19 status was still up trending. The clinical profile and patient-related information were collected from the medical records. Of them, 55.4% (112 patients) were within the city, 35.1% (71 patients) were from suburban areas of the city, and 9.4% (19 patients) were from adjacent districts/rural areas. Also, 56% were educated. Of these, 87% wanted to continue treatment and did not bother about the spread of the infection, while remaining patients' main concern was to avoid infection than to get oncological management. Also, 76% were aware about the COVID-19 infection and sequelae. A total of 80% patients were aware of the consequences due to delay in cancer treatment. Of these patients, 51%, 42% and 7% had mild, moderate, and severe anxiety respectively and 69%, 25% and 6% had mild, moderate, and severe depression respectively. The severe anxiety and depression correlated with metastatic breast cancer and educated patients.

Conclusion This study reflected that the breast cancer patients were more bothered to continue the treatment in spite of the existing pandemic.

Keywords: COVID-19 pandemic, breast chemotherapy, psychological status

Outcome of Treatment in Elderly Myeloma—A Single-Centre Experience

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Abstract

Introduction Multiple myeloma (MM) accounts for approximately 1% of all cancers and 10% of all hematologic malignancies. In our institution, we see around 200 patients with myeloma every year. We present our

