CHEMOTHERAPY INDUCED NEUTROPENIA AMONG PEDIATRIC CANCER PATIENTS IN EGYPT RISKS AND CONSEQUENCE

Marwa Zakaria, Tamer Hassan, Mohamed Badr, Sahbaa Fehr, Asmaa Esh

Zagazig University, Egypt

Background/objectives

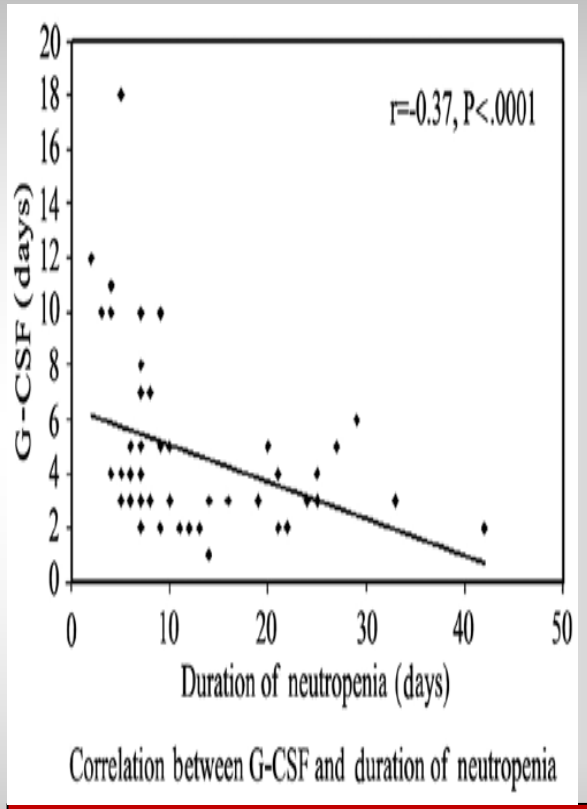
Chemotherapy –induced neutropenia (CIN) is the major dose-limiting toxicity of systemic chemotherapy, and is associated with substantial morbidity, mortality and costs. The aim of the current work was to identify risk factors that may predispose pediatric cancer patients, treated with myelo-suppressive chemotherapy, to CIN and associated sequels.

Materials and Methods

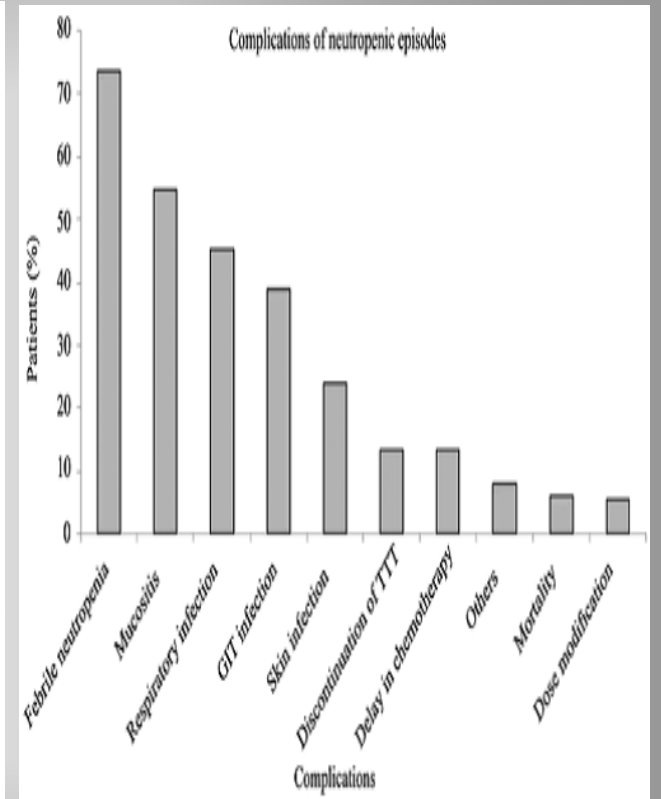
113 neutropenia episodes were analyzed, risk factors for CIN were classified into; patient-specific, disease-specific and regimen specific while consequences associated with CIN were divided into infectious and dose modifying sequels. Both risks and consequences were analyzed to target high risk patients with appropriate preventive strategies

Results

28% of patients presented with single neutropenia attack while 72% experienced recurrent attacks . Mean absolute neutrophil count (ANC) was 225.5±128.5 (10^9/L), ranged from 10-497(10^9/L) started at 14.2±16.3 days (ranged 2-100) after the onset of chemotherapyor without (54.9%) granulocyte colony stimulating factor (G-CSF).No significant association and resolved within 11.2±7.3 days either with (45.1%) was found between any patient character or disease stage and CIN risk. However, certain malignancies (ALL, Neuroblastoma and Burkitt's lymphoma) and certain regimens (induction block for ALL, AML) had the worst myelotoxic effect . G-CSF significantly shortened the neutropenia episodes. Febrile neutropenia was the leading complication among patients (73.5%), associated with several documented infections particularly mucositis (54.9%), respiratory (45.1%), GIT (38.9%) and skin (23.9%) infections. 6% of our cases died of infection –related complications. Neutropenia was responsible for treatment discontinue (13.3%), dose delay (13.3%), and dose reduction (5.3%) in patients. The Mean cost for each episode was 9386.5±6688.9 Egyptian pounds .



Correlation between G-CSF and duration of neutropenia



Conclusion

Although this study is preliminary survey with relatively small number of patients, our findings are relevant to clinical care of pediatric cancer patients in our region. Special attention to CIN prevention should be directed to hematologic malignancy cases especially at early cycles. Severe and prolonged neutropenia are life-threatening events that need aggressive management.