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637.MYELODYSPLASTIC SYNDROMES - CLINICAL AND EPIDEMIOLOGICAL

Severe Chronic Idiopathic Neutropenia Managed with Chronic Filgrastim: A Case Report

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Myelodysplastic syndrome (MDS) represents a heterogeneous group of hematological disorders characterized by ineffective hematopoiesis and abnormal blood cell production. Chronic neutropenia is one such MDS and is classified into mild (Absolute Neutrophil Count (ANC): 1,000 to 1,500/μL), moderate (ANC: 500 to 1,000/μL), or severe (ANC: below 500/μL), with the latter posing the highest risk of infection-related complications. In an attempt to alleviate neutropenia, patients with MDS are often treated with colony stimulating factors (CSFs), such as filgrastim to promote growth and maturation of neutrophils. The target ANC is 1,500 to 2,000/μL for adequate protection against most infections. However, CSF treatments have the potential to stimulate the transformation of MDS into acute myeloid leukemia (AML) so CSF is often used with caution. Presented below is a case of severe chronic idiopathic neutropenia responsive to chronic filgrastim that has yet to show evidence of transformation.

A 79 year-old female with a past medical history of distant tobacco use, hypertension, acute cerebrovascular accident, and Hashimoto's thyroiditis presents to the clinic for routine follow-up of her now stable chronic idiopathic neutropenia being managed with weekly filgrastim injections for three weeks with one week off in between cycles. She had originally presented to medical attention in 2004 complaining of chronic mouth sores and ulcers with leukopenia and a severely decreased ANC of <500/μL. Continued monitoring with more than 3 complete blood counts (CBC) with a differential consistently noted a decreased ANC in the setting of persisting oral mucosal erosion. Leukocytes were not noted to be dysplastic, quantitative IgG, IgA, IgM levels were noted to be within normal limits, anti-nuclear antibodies/ anti-neutrophil antibodies were noted to be negative argued against an etiology of large granular lymphocytic leukemia, immunodeficiency, and/or autoimmune disorders, respectively. A trial of glucocorticoids did not significantly increase her ANC which led to her ultimately receiving a bone marrow biopsy (BMB) in 2008. A mildly hypercellular marrow with trilineage hematopoiesis was found, with maturation of all lines, negative flow cytometry, and myelodysplasia. Comforted by the lack of MDS pathologically, the patient was started on filgrastim with significant improvement. Over the course of years the frequency and duration of filgrastim was optimized to her current regimen of weekly filgrastim injections for 3 weeks followed by one week off which allowed her to maintain an adequate ANC and avoid oral ulcers to this day.

Despite the feared complication of kickstarting the transformation of MDS into AML with CSF therapy, patients such as the one mentioned here can benefit greatly from judicious use of CSF when blood work can be monitored for complications. The use of G-CSF in severe chronic neutropenia to raise levels from below 500/μL to the ideal target ANC is 1,500 to 2,000 cells per microliter (μL) for adequate protection is in line with our current understanding that even long-term use of G-CSF does not appear to increase the risk of AML (Dale et al., 2022). G-CSF should continue to be considered in the management of severe chronic neutropenia as the risk for transformation may be insignificant compared to the clinical benefit of its use when properly monitored.

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