

Antineoplastics

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Pancytopenia and off-label use: case report

A 27-year-old man developed pancytopenia during treatment with cytarabine, dexamethasone, hydroxycarbamide and off-label gilteritinib [*not all dosages and routes stated*].

The man presented with hyperleucocytosis and was diagnosed with acute myeloid leukaemia (AML). He started receiving treatment with hydroxycarbamide, dexamethasone and 3 doses of cytarabine 100 mg/m² over the first 48h for hyperleucocytosis. Additionally, he received rasburicase for tumour lysis syndrome prophylaxis, and unspecified antibiotics to treat underlying cellulitis and febrile neutropenia. Nasal and pharyngeal swab were found to be positive for severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) RNA. Due to active SARS-CoV-2 infection and the presence of a fms related receptor tyrosine kinase 3 internal tandem duplication (FLT3-ITD) mutation, he was treated with off-label oral gilteritinib 120 mg/day, from day 3. Dexamethasone was stopped. On day 6, he presented with changes typical for COVID-19 and required in-patient intubation for adult respiratory distress syndrome. On day 14, dexamethasone was briefly restarted to prevent early differentiation syndrome. During the admission, he developed severe neutropenia and thrombocytopenia. He was diagnosed with pancytopenia. CRP level was less than 5 mg/L. On day 20, he was extubated to CPAP. However, the man experienced a febrile episode associated with seizures on day 22 secondary to *Escherichia coli* bacteraemia, which required re-intubation, along with vasopressor support and further antibiotics with improvement. On day 25, gilteritinib was discontinued temporarily for 7 days due to biochemical features of septic shock-related cardiomyopathy. He experienced neutropenia for 5 days and thrombocytopenia for 17 days. At the time of the report, he continued gilteritinib therapy, with a plan to undergo allogeneic stem cell transplantation.

Wilson AJ, et al. Successful remission induction therapy with gilteritinib in a patient with de novo FLT3-mutated acute myeloid leukaemia and severe COVID-19. *British Journal of Haematology* 190: e189-e191, No. 4, Aug 2020. Available from: URL: <http://doi.org/10.1111/bjh.16962> 803506401