

Dose intensity and hematologic toxicity in older cancer patients receiving systemic chemotherapy.

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Study overview: In older patients receiving chemotherapy, dose reductions are commonly used to lower the risk of haematological toxicity. This prospective study investigated patient and treatment characteristics that contributed to haematotoxicity in 976 older cancer patients recruited from 115 US community oncology practices. All patients were aged ≥ 70 years and received chemotherapy treatment for solid tumours or lymphoma; 72% of patients were chemotherapy-naïve and approximately 50% had potentially curable, non-metastatic disease.

Key findings: The risk of febrile neutropenia (FN) or severe neutropenia (SN) was greater in patients with some types of cancer (notably small cell lung cancer, lymphoma and breast cancer), and patients who had elevated blood urea nitrogen, elevated alkaline phosphatase and body surface area $\leq 2 \text{ m}^2$. Increasing age was not identified as an independent risk factor for neutropenic complications. The risk of FN or SN was also increased by certain treatment-related factors: planned relative dose intensity (RDI) $\geq 85\%$, use of anthracycline- or platinum-based regimens, and a history of previous chemotherapy. Primary colony-stimulating factor prophylaxis, used in 14% of patients, significantly decreased the risk of neutropenic complications.

More than 50% of these patients aged ≥ 70 years received an actual RDI of $< 85\%$ of standard dose intensity, including 49% of patients with potentially curable, non-metastatic cancer. This rate rose to 60% in patients aged ≥ 80 years. Increasing age was associated with lower RDI and decreased incidence of neutropenic events, suggesting that planned reductions in RDI protected patients against haematological toxicity. However, as 50% of the elderly patients with potentially curative disease did not receive RDI $> 85\%$, this practice has the potential to compromise patient outcomes.

In those patients aged ≥ 70 years who received an actual RDI $\geq 85\%$, there was no significant difference in SN or FN by age group or disease stage.

Conclusions: The authors identified several baseline patient and treatment-related risk factors that contribute to haematological toxicity in older patients, and could help to identify elderly cancer patients who may benefit from supportive care.

<http://www.ncbi.nlm.nih.gov/pubmed/17705197?dopt=Citation>