EDITORIAL

Primary G-CSF prophylaxis following docetaxel treatment

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Febrile neutropenia is a frequently occurring complication following chemotherapy. It causes significant short-term morbidity, mortality, and is costly. It may also affect subsequent chemotherapy dosing, which in turn, could lead to inferior long-term survival.[1] To reduce the incidence of febrile neutropenia and its complications, primary granulocyte-colony stimulating factor (G-CSF) prophylaxis is recommended by international guidelines when the risk of febrile neutropenia is 20% or higher.[2] In daily practice, febrile neutropenia rates are based on data from randomised controlled trials, but observational studies consistently report higher incidences of febrile neutropenia.[3]

In this issue of the Netherlands Journal of Medicine, van Dooijeweert et al.[4] describe that in a retrospective cohort of 181 breast cancer patients, the rate of febrile neutropenia following three cycles of 5-fluorouracil, epirubicin, cyclophosphamide (FEC) and three cycles of docetaxel (D) is significantly higher (31.5%) than the commonly assumed rate (10-20%) described in the European Organisation for Research and Treatment of Cancer guideline.[5] The occurrence of febrile neutropenia was highest after the first docetaxel cycle (20.9%). The authors conclude that this high percentage of febrile neutropenia following docetaxel treatment justifies starting primary G-CSF prophylaxis during the first docetaxel cycle.

This conclusion adds to the existing literature on the incidence of febrile neutropenia after FEC-D and its prevention by primary G-CSF treatment, as the authors rightly mention. A recent systematic review, also cited by van Dooijeweert et al., summarizes 11 mostly retrospective studies on the rate of febrile neutropenia after FEC-D with and without primary G-CSF prophylaxis. This review concludes that patients who received FEC-D with and without primary prophylaxis, presented median febrile neutropenia rates of 10.1% and 23.9%, respectively.[6]

Although G-CSF clearly reduces the rate of febrile neutropenia after FEC-D, a remaining question is whether primary G-CSF prophylaxis after FEC-D is cost-effective, and whether preventing febrile neutropenia reduces long-term mortality. These studies are difficult to conduct, and will most likely not be performed anymore because FEC-D is less frequently used. Nonetheless, as is concluded by van Dooijeweert et al., the febrile neutropenia rate of more than 20% justifies, according to international guidelines, the use of primary G-CSF prophylaxis when FEC-D is given, in breast cancer patients in adjuvant and neo-adjuvant settings.

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