COST-EFFECTIVENESS OF LENOGRASTIM ON NEUTROPENIA DURATION IN ADULTS RECEIVING CHEMOTHERAPY FOR SOLID TUMORS OR LYMPHOMAS

Introduction
Neutropenia is defined as a reduction in the neutrophil count below 1,500/mm3. Neutropenia is associated with an increased risk of infection in patients receiving chemotherapy for solid tumors and lymphomas. During chemotherapy, neutrophil counts generally reach 60-80%. A decrease of the neutrophil count results in impaired immunity and an increased risk of infection. Neutropenia is defined as a neutrophil count below 1,000/mm3, but over 500/mm3 and in grade 4 neutropenia the ANC falls below 500/mm3. There are two main types of neutropenia: chemotherapy-induced neutropenia and infection-induced neutropenia. Studies of neutropenia and evaluations have not been the final step in determining the cost-effectiveness of different treatments.

Objective
The objective of this economic analysis was to compare the costs of lenograstim therapy with those of other products containing granulocyte colony stimulating factor (G-CSF) available on the market.

Methodology of the analysis
The analysis was performed according to the PICO format.

Modeling of the course of treatment
The course of treatment was described taking into account the following periods (in days):

- Duration of fever;
- Duration of treatment with lenograstim and pegfilgrastim;
- Duration of intravenous administration of antibiotics;
- Duration of hospital stay;
- Duration of recovery of the ANC to 1,000/mm3;
- Duration of hospital stay and use of antibiotics.

Results
Based on the data from randomized controlled trials (RCTs) was adopted for cost-effectiveness analysis. The costs included were based on the Polish NHF catalogue (June 2009). The price of 1 MIU of lenograstim and pegfilgrastim (both per 1 MIU) and compared to pegfilgrastim -1,200 PLN and compared to pegfilgrastim -1,900 PLN (CI95% [300; 600]). The differences in costs ranged from 500 PLN to 1,200 PLN.

Costs calculation
Costs were calculated for each patient at the rate of G-CSF products weighted with respect to the duration of fever.

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References
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9. Cost-effectiveness of lenograstim on neutropenia duration in adults receiving chemotherapy for solid tumors or lymphomas.
10. From the perspective of the Polish public payer the use of lenograstim dosage 19.2 MIU/m2 body surface area is more expensive than filgrastim and less expensive than pegfilgrastim.