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abstract

Cost Effective Utilization of Pegylated L-Asparaginase in a Tertiary Care Hospital of India

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Introduction: Pegylated L-Asparaginase (P-LA) has a longer half-life and lower hypersensitivity reactions. Unfortunately, it is a rich man's domain. P-LA (3750 units) costs USD 525 in India versus conventional L-Asparaginase (C-LA) costing USD 20 (10,000 units), precluding routine use of P-LA. The aim was to evaluate the cost-effectiveness of sharing a vial of P-LA versus using C-LA alone.

Methodology: P-LA was shared among patients with Acute Lymphoblastic Leukemia/Lymphoma. An opened vial was kept for 24 hours and discarded thereafter. The vial was split among children who were due to receive L-asparaginase in this time period. One dose of P-LA was considered equivalent to 4 doses of C-LA.

Results: Two hundred and ninety-five doses of C-LA/P-LA were administered to patients in our unit (age: 6 ± 2.66 [2-13] years) between June 2021 to January 2022. The mean prescribed dose of P-LA was 810.34 ± 264.14 units (400 – 1700) at 1000 units/m²/dose. The number of patients who shared a vial of P-LA was 3.78 ± 8 (1-5). The average dose discarded per vial was 1050 ± 668 units. With sharing, the average cost of P-LA/dose was USD 112. The cost of 4 doses of C-LA was USD 80.

Conclusion: Dividing a vial of P-LA amongst patients is feasible in centers with a large number of patients, despite which there was an average discard of 1000u/ vial. The difference in cost between P-LA and C-LA was reduced to just USD 32 as compared to USD 445 if a vial is not dispersed among patients. In addition, the cost of coming to the hospital for 4 visits vis-a-vis one visit adding onto busy daycare requires consideration. A smaller-sized vial of P-LA is the need of the hour which would enable all patients to receive P-LA and avoid wastage of precious drugs.