Direct medical costs of nasopharyngeal carcinoma in Indonesia: a healthcare payer perspective

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ABSTRACT

Background: Nasopharyngeal carcinoma (NPC) is a common and deadly cancer in Indonesia. The objective of this study is to estimate the direct medical hospital costs of NPC using the national health insurance (*Jaminan Kesehatan Nasional* [JKN]) database in Indonesia.

Methods: The annual costs were estimated using a nationally representative sample of 1% of the JKN population, comprising 2.1 (2019) to 2.4 million (2022) JKN members, from 2019 to 2022. Patients newly diagnosed with NPC, who had at least two NPC-related visits and no prior cancer diagnosis in the year before, were included. Annual costs were calculated over one year (365 days) from the first visit associated with NPC. Costs captured under Case-Base Groups (CBGs) comprised hospitalization and specialist outpatient visits. Non-CBGs costs included radiotherapy, diagnostic procedures, and other costs such as prostheses. Chemotherapy costs were not available for analysis. Costs in Indonesian Rupiah (IDR) were inflated using the Consumer Price Index in 2022 and converted to United States dollars (USD) (1 USD = IDR 15,731).

Results: Of the 590 NPC patients with records in JKN, 262 patients met the inclusion criteria. Around 29% of these patients did not receive any NPC-related treatment one year after diagnosis. The annual mean cost was USD 4644 per patient. CBGs accounted for 92% of the total mean cost, with inpatient and outpatient CBGs costing USD 2014 and USD 2278 per patient, respectively. Non-CBGs cost per patient was USD 353. The total direct medical hospital cost for all NPC patients in the JKN population was extrapolated to be USD 40.5 million per year. This comprised 14% of the JKN cancer expenditure.

Conclusions: NPC imposes a significant economic burden on Indonesia's health system. To contain health expenditures, specific policies are needed to improve cancer prevention and early diagnosis, as well as to efficiently allocate healthcare resources.