Time-Driven Activity Based Costing of advanced ovarian cancer from the perspective of a Brazilian public hospital

EE87

Rodrigo Saar da Costa[1], Pamela Santana[2], Carolina Souza Machado Martins[3], Raquelaine Aparecida Padilha[4], Lucas Miyake Okumura[5], Ingrid Rodrigues Areas[6], Mariana Massaoka[7], Andreia Cristina de Melo[8]

[1]Pharmacist (corresponding author), Doctor, INCA; email: saarrc@gmail.com, Avenida Via Binário do Porto, 831 - Santo Cristo, Rio de Janeiro-RJ, [Zip Code] 20081-250, Brazil. Phone: +5521996548981. [2]Pharmacist, Master, AstraZeneca; email: pamela.santana@astrazeneca.com; Cotia-SP, Brazil. [3]Pharmacist, Postgraduate in Multiprofessional Residency at INCA, INCA; email: carol.souzamachado@gmail.com; Rio de Janeiro-RJ, Brazil. [4]Nurse, Master, INCA; email: raquelaine.padilha@gmail.com; Rio de Janeiro-RJ, Brazil. [5]Pharmacist, Master, Astrazeneca; email: okumura.lucas@gmail.com; Cotia-SP, Brazil. [6]Pharmacist, Postgraduate, AstraZeneca; email: ingrid.areas@astrazeneca.com; Cotia-SP, Brazil. [7]Biomedical Scientist, Doctor, AstraZeneca; email: mariana.massaoka@astrazeneca.com; Cotia-SP, Brazil. [8]Physician, Doctor, INCA; email: andreia.melo@inca.gov.br, Rio de Janeiro-RJ, Brazil

AstraZeneca

Introduction

Ovarian cancer is the most lethal and the second most common gynecologic tumor in Brazil[1]. It is estimated that 67% of ovarian cancer cases in Brazil are advanced - stage III/IV.[2]. Currently, the standard treatment for patients treated in the Brazilian public healthcare system is surgery (primary or debulking), followed by platinum-based chemotherapy and active surveillance. The response rate to chemotherapy is estimated to be 75%; however, 70% of cases experience disease recurrence[3]. Late diagnosis and lack of effective therapies have the potential to impact not only the clinical outcomes of patients but also the costs to healthcare systems.

This study assesses the cost of advanced high-grade serous ovarian cancer (HGSOC), from the perspective of a Brazilian public reference hospital.

Methodology

Retrospective cohort study of women newly diagnosed with HGSOC, stage III/IV, treated at the National Cancer Institute (INCA).

A bottom-up micro-costing method was applied, using the time-driven activity-based cost (TDABC) approach.

Resource data were obtained from medical charts and aggregated. Unit costs were extracted from official databases: Health Price Bank (BPS) for drugs and hospital supplies, SUS Management System (SIGTAP) for surgeries and medical tests, and National Union of Federal Public Servants in Science and Technology (SINDCT) for human resource costs.

All patients were diagnosed in 2017 and followed up for up to 5 years.

The findings were validated by 68 healthcare professionals and managers through an expert panel.

The costs were converted from Brazilian currency (BRL) to US dollars (USD) using the exchange rate of 1 USD = 0.19 BRL (06/2021).

This study was approved by the Research Ethics Committee (CAAE: 95157018.9.0000.5274).

Results

Figure 1. Number of patients with ovarian cancer included in the study

110 ovarian cancer patients, of whom:

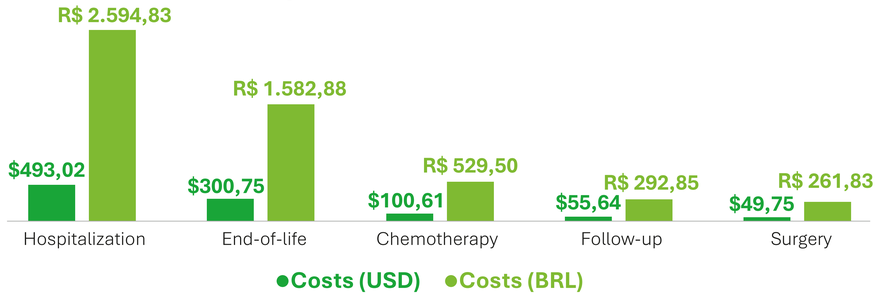
27 patients
platinum-based responders
Stage III/IV HGSOC

Figure 2. Treatment costs per patient during treatment period.

The average total cost per patient was
BRL 184.166,32
(USD 34,991.60)
(median follow-up of 35.3 months)

Mean monthly cost per patient was
BRL 5.261,89
(USD 999.76)
with 78.16% spent in the first two years

Figure 3. Monthly costs per patient related to clinical management and treatment of ovarian cancer



Hospitalizations and end-of-life care were the highest costs: 49% and 30%, respectively.

Figure 4. Reasons for hospitalizations related to ovarian cancer

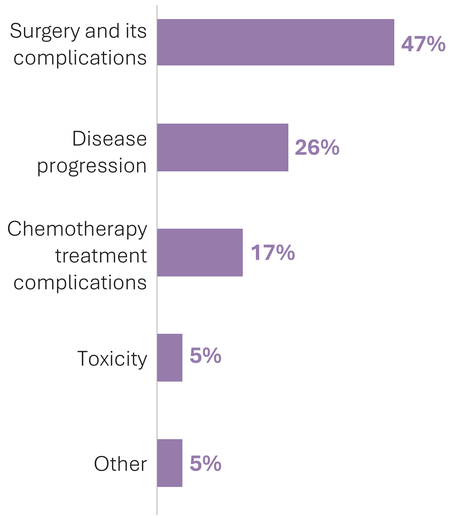
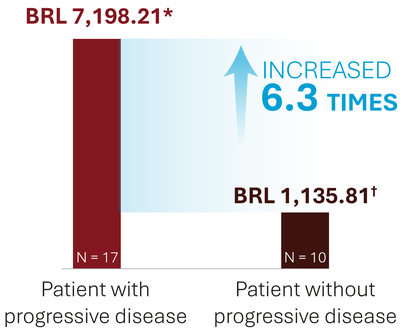


Figure 5. Average monthly cost per patient by disease progression status



*USD 1.367,66; †USD 215.80

The mean monthly cost of patients who presented disease progression increased.

For all cases, chemotherapy costs were higher than the reimbursement value set by the Ministry of Health (APAC-ONCO).

Conclusion

The main economic burden in HGSOC is related to the need of effective therapies to reduce disease progression and cumulative chemo-related toxicity.

It is essential to review investments in this disease to effectively allocate resources and optimize costs.

References

BPS: Health Price Bank; **HGSOC:** High-grade serous ovarian cancer; **SIGTAP:** SUS Management System.

1. Nogueira-Rodrigues A, Rosa DD, Suzuki DA, et al. Breast and gynecologic cancers as a Brazilian health priority. Rev Assoc Med Bras (1992). 2023 4;69(suppl 1):e2023S120. **2.** Paulino E, de Melo AC, Silva-Filho AL, et al. Panorama of Gynecologic Cancer in Brazil. JCO Glob Oncol. 2020;6:1617-1630. **3.** Ushijima K. Treatment for recurrent ovarian cancer-at first relapse. J Oncol. 2010;2010:497429.

ISPOR
Improving healthcare decisions