Abstract: P2196

Title: THE DIRECT COSTS OF TRANSFUSION-DEPENDENT BETA-THALASSEMIA IN SAUDI ARABIA: A COST OF ILLNESS ANALYSIS STUDY

Abstract Type: e-Poster Presentation

Topic: Thalassemias

Background:

Thalassemia is an inherited blood disorder that affects red blood cell production, leading to significant mortality and morbidity. Saudi Arabia has one of the highest prevalences of thalassemia in the world at about 0.7 beta-thalassemia major patients per 1000 and 13.6 carriers for every 1000 based on available data with indications of a reduction in rates with recent premarital screening efforts.

Patients with transfusion-dependent thalassemia require lifelong regular blood transfusion. The high prevalence in the country and the associated significant healthcare needs resulting from the disease indeed lead to major health costs where there is currently a knowledge gap. Previous studies have reported high healthcare resource utilization and cost in various parts of the world. The annual direct costs of one patient ranged from 1,714€ to 33,018€ in the Middle East but up to 126,779€ in the United States. To our knowledge, there have not been any reports on costs related to transfusion-dependent thalassemia in Saudi Arabia.

Aims:

This study aimed at assesing the annual direct cost while managing beta-thalassemia major at a single tertiary centre.

Methods:

This is a single-centre retrospective prevalence-based bottom-up approach to estimating the cost of illness for thalassemia majors. Data on transfusion-dependent thalassemia major patients was collected through the medical health records between 2018 and 2022. This included patients' characteristics, laboratory investigations, chelation therapy and other medications, number of transfusions and hospital visits, and surgical procedures. Direct costs were calculated for each patient by summing up the unit costs of each intervention multiplied by the number of episodes. Total direct costs were calculated as the sum of all intervention costs. The average annual direct medical cost per patient was calculated by dividing the total annual costs by the total number of patients included in the study.

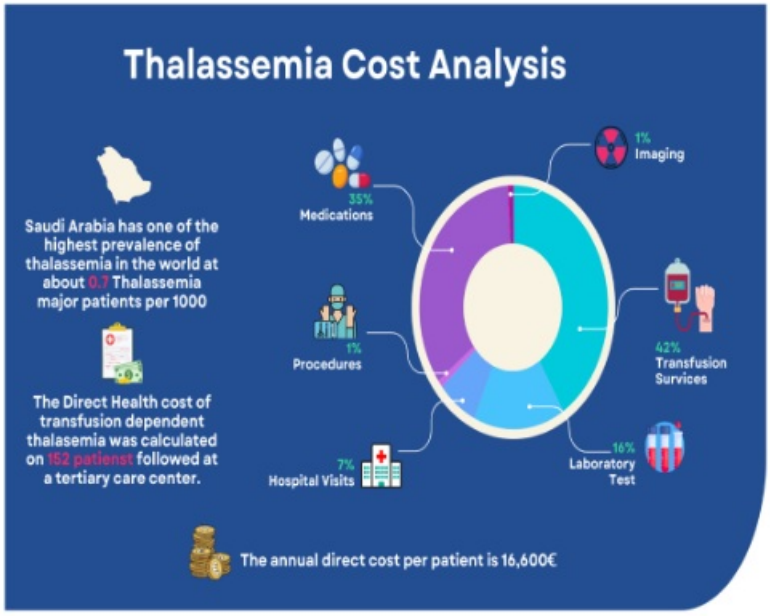
Results:

A total of 152 beta-thalassemia major patients were eligible for our study. The mean age was 25 years, and 49% of the patients were females. Among our cohort, 72% were expatriates. On average, a patient needed about 0.2 admissions, 0.53 emergency visits, and 8.1 day-care visits a year and underwent complete blood count assessment and cross-matching 11.4 and 9.7 times per year, respectively. We found the annual direct cost per patient to be at 16,600€. Most of these expenses (42%) were directed toward regular transfusion services, 35% toward medications, dominated by the cost of chelation agents, 16% for laboratory testing, 7% for hospital visits, 1% for operative procedures, and 1% for imaging. Based on the most recent data on the prevalence of thalassemia in the population, the annual cost of thalassemia in Saudi Arabia is estimated at 371,840,000 €. It is important to note that the study period included the COVID-19 pandemic dates, which may have slightly lowered the estimates.

Summary/Conclusion:

Transfusion-dependent beta-thalassemia has a significant cost burden in Saudi Arabia, and the cost is likely exponentially higher if indirect expenses were to be incorporated. Ongoing national efforts in premarital testing and genetic counselling are hopefully reducing these costs, and further studies are needed to establish

that.



Keywords: Cost analysis, beta thalassemia