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Unlocking Potential

Disease Burden of Sickle Cell Disease in Saudi Arabia

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INTRODUCTION

Sickle cell disease (SCD) is a hereditary hemolytic disorder that causes red blood cells (RBCs) to assume a sickle shape due to abnormal hemoglobin molecules.[1]

This disease is a common genetic blood disorder in Saudi Arabia. [2]

The objective of this literature review was to comprehensively analyze the burden of sickle cell disease in Saudi Arabia, with a focus on its epidemiological, humanistic, and economic impact.

Through a review of available literature, this study sought to inform healthcare policies and resource allocation by providing a deeper understanding of the patient burden of sickle cell disease and its impact on quality of life, as well as the needs of the patients.

METHODOLOGY

Relevant studies were identified through a literature search conducted using PUBMED, and all articles related to SCD burden in Saudi Arabia were carefully reviewed and analyzed. In addition to articles directly related to the topic, we used the snowball method[3] to include other relevant publications in the review.

RESULTS

Epidemiological Burden

The epidemiology of SCD in Saudi Arabia reveals a varied prevalence across different regions.

In fact, SCD displays a dominance of prevalence in the eastern region at 145 cases per 10,000 individuals, followed by the southern region at 24 cases per 10,000 individuals. The western region exhibits a prevalence of 12 cases per 10,000 individuals, while the central region has the lowest prevalence at 6 cases per 10,000 individuals. [2]

Figure 1. **SCD Prevalence across Saudi Arabia**

RESULTS (continued)

Consanguineous marriages are identified as a major risk factor for SCD, with carrier status ranging from 2% to 27%.

The clinical phenotype of SCD in Saudi Arabia has two major forms, with the Benin haplotype being more severe and prevalent in the western province, while the Arab-Indian haplotype is mildly severe and prevalent in the eastern province. [4]

Humanistic Burden

SCD was found to have a negative impact on the quality of life of patients, with a significant proportion of patients reporting poor quality of life. Additionally, SCD was associated with a higher rate of depression among both pediatric and adult patients, leading to a considerable detriment to patient quality of life as well as mental health.[5,6]

Overall, SCD negatively affects various aspects of patients' lives, including quality of life and mental health.

Economic Burden

The economic burden of SCD in Saudi Arabia estimated over a one-year period was substantial, with total costs of $395 million from the payer's perspective and $1.4 billion from a societal perspective, including indirect costs such as productivity losses for the management of 94,455 SCD patients. [7]

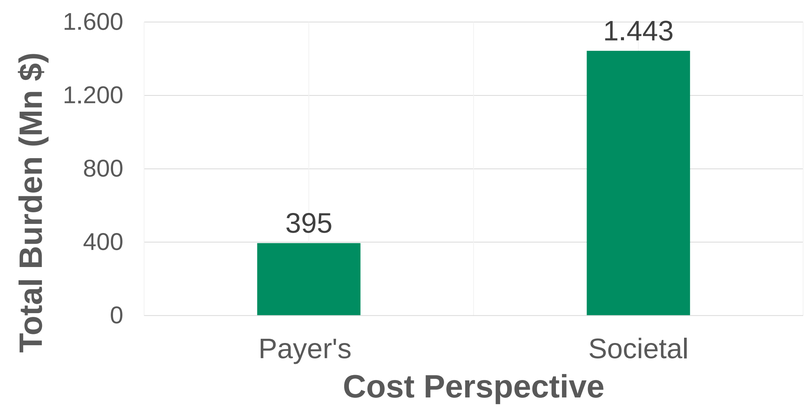

Figure 2. **Total SCD Economic Burden by Cost Perspective**

CONCLUSIONS

This review highlights the significant burden of SCD in Saudi Arabia, with variations in prevalence across different regions, and a substantial impact on patient QOL and the economy. These findings suggest the need for targeted interventions to increase awareness, improve disease management and reduce its economic burden.

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