Global Thalassemia Epidemiology: A Systematic Literature Review

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BACKGROUND

- Alpha and beta-thalassemia are characterized by red cell membrane dysfunction, resulting in ineffective erythropoiesis and hemolytic anemia.
- Patients with thalassemia intermedia or major may experience complications, including gallstones, cholelithiasis, biliary cirrhosis, and increased risk of mortality.
- While thalassemia is often considered a disease of limited geographic importance, recent growth in thalassemia prevalence has been observed. Thus, the global prevalence of thalassemia has changed due to factors such as population screening, improved survival rates, and migration.

AIMS

- To determine the global prevalence of alpha- and beta-thalassemia (excluding fetal forms) and to identify critical gaps in evidence.

METHODS

- A systematic literature review (SLR) was conducted. Embase (via Embase.com) and the Cochrane Library Database of Systematic Reviews were searched for identifying interventions. The searches included the Medline database, and the bibliographic databases were searched. The Grey literature from the past 3 years (2017–2020) was also searched.

RESULTS

- Of the 15 records reviewed, 3 publications noted the protocol the review methods to include in the study. Four additional designs were identified, including existing international epidemiological surveillance or health services data.

- The publication years; the thalassemia publication type; and the grey literature from the past 3 years (2017–2020).

- The median prevalence was calculated across the estimates found in EU28 countries in the most recent publications. The prevalence of thalassemia ranged from 0.11/100,000 in the US to 11.6/100,000 in Greece.

LIMITATIONS

- Since the EHA thalassemia prevalence data were only available for 42 countries, the median prevalence from the 9 countries in Cyprus was used. The countries for which data were not available included those with high or low thalassemia burdens, and of the countries included in the study, only the data from 42 countries were included.

CONCLUSION

- There are limited prevalence data in non-European countries, and in alpha-thalassemia in general.

- Additional studies, including global and country-specific thalassemia registries, are needed to better understand the current prevalence of thalassemia.

- The evidence compiled in the SBA support thalassemia screening being a core criterion (ie, 900/1,000,000 to the EU and 900,000 in the US).

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