Effect of the Libyan Conflict on Genodermatoses` Service

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Abstract

A twelve-year-long conflict in Libya has badly affected its health system. The Libyan Genodermatoses Task Force (LTG) analyzed assessments conducted by the World Health Organization in Libya on the impact of the armed conflict in Libya on health services, and results were used as a proxy indicator to access to rare skin diseases, including genodermatoses clinics. A web-based registry platform was introduced in 2024 by the LGT and an Xcel live document to fill in the data about genodermatoses during the conflict period, and the data were compared to the surveys conducted before the conflict. Reduced availability and readiness for dermatology services and under-recording of genodermatoses were reported. The total number of registered cases of genodermatoses in the 12-year post-conflict period was much lower than the number of cases reported in one year before the conflict (766 vs. 1,024). There is a need to improve the national registry of genodermatoses and guide efforts to improve the services for these rare diseases, which were further neglected during the conflict.

Key words: Genodermatoses, armed conflict, Libya

Introduction

In 2004, a survey conducted in Libya identified 1,024 cases of genodermatoses, with an overall prevalence of 15.7 per 100,000 population, and genodermatoses represented 1% of paediatric dermatology consultations[1]. The most common types of genodermatoses were ichthyosis (32.8%), followed by epidermolysis bullosa (18.9%), xeroderma pigmentosum (10.6%), and albinism (9.7%). In 2008, a Libyan Genodermatoses Taskforce (LGT) was established, and three dermatology departments in the cities of Tripoli, Benghazi, and Al Baida cities were selected to provide care for patients and collect data to develop a national registry. In 2010, discussions started establishing a molecular laboratory in Libya in partnership with Sheffield University, U.K. In the same year, projects were submitted to the National Scientific Research Authority (NSRA) to support researchers conducting molecular studies of the commonest genodermatoses in Libya. In 2011, the Libyan revolution started, and the twelve-year-long conflict in Libya has badly affected its health system. Attacks on healthcare facilities have damaged some primary healthcare centers and hospitals. Prolonged armed conflict also constrains efforts to address skin diseases. A new initiative resumed the LGT's activities in 2024 to mobilize the necessary skills and expertise to develop a national registry of genodermatoses and improve access to consultation at the municipality level. The LGT analyzed assessments of the impact of the armed conflict in Libya on health services.

Objective

Assessment of the impact of armed conflict on genodermatoses services in Libya can guide actions to focus the LGT's activities, support advocacy efforts, and raise awareness about the burden of genodermatoses in Libya.

Materials & Methods

We systematically reanalyzed data from original post conflict health services assessments conducted in Libya and presented them descriptively.

Health Service Availability and Readiness Assessment (SARA):

We reviewed assessments conducted in Libya in the last decade to analyze the impact of armed conflict on health service provision. The comprehensive picture of health service availability and readiness provided evidence about the consequences of the damage to dermatology care in Libya. The World Health Organization (WHO) tool "SARA" was conducted twice in Libya[2], in 2012 and 2017. Data about Libyan hospitals, including the three major hospitals providing dermatology care, were analyzed. The direct impact of the conflict on health care provision was used as a proxy to indirectly estimate the effect of the armed and political conflicts in Libya on dermatology services, including genodermatoses clinics. Availability and readiness of health services were assessed, and barriers to access were reported.

Health Resources and Services Availability Monitoring System (HeRAMS)

HeRAMS aims to provide decision-makers with critical and up-to-date information on the availability of essential health resources and services. This approach was designed to be realistically feasible in highly constrained and dynamic contexts such as humanitarian emergencies. HeRAMS was conducted in 2021 in Libya[3].

Laboratory Facilities and Molecular Analysis:

An assessment[4] of public health laboratories conducted during the COVID-19 pandemic was reviewed to analyze the capacity of molecular testing at the municipality level. A desk review with stakeholders from the National Center for Disease Control (NCDC) and WHO was concluded to assess the future perspective for gene sequencing.

Data Collection about genodermatoses at the municipality level:

A total of 45 dermatologists from the 22 Libyan municipalities with interest and experience in genodermatoses volunteered to be part of the new LGT. A web-based registry platform was introduced (https://libyangenodermatoses.com) , and an Xcel live document to fill in the data about genodermatoses was shared with the LGT members and to be updated quarterly (Geno data Libya 2024.xlsx). The data were compared to the surveys conducted in 2004 and 2008.

Results

Four comprehensive assessments of availability and readiness conducted in the last decade in Libya were reviewed and reanalyzed to understand the effect of the conflict on dermatology services. The results can be divided into impact of the conflict on infrastructure of health facilities, and on health service provision.

Health services Infrastructure:

Complete destruction of an Al Jomhoria Hospital in Benghazi occurred during the conflict; this critical infrastructure provided referral dermatology services for almost a third of the Libyan population. In addition, it is the principal department conducting postgraduate training in the country. In 2014 it was targeted during the conflict before completely damaged in 2016.

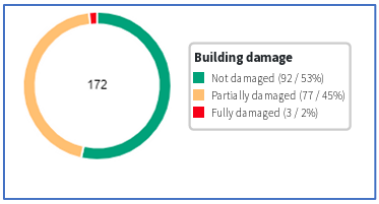
Benghazi Dermatology Department (BBD): A two-storey building was destroyed in 2016.

BDD in 2010

BDD in 2014 partially damaged

Service provision:

In 2017, the Service Availability and Readability Assessment (SARA) conducted by WHO showed that 18% of hospitals and 20% of primary healthcare PHC facilities were closed. There was an acute shortage of medical specialists and nurses. In many remote and hard-to-reach locations, poor and vulnerable communities had minimal access to health care.



In 2019, health analysis showed that only 59% of PHC facilities provide curative and preventive services for children under five years of age, 42 % of PHC facilities provide Non-Communicable Diseases care, and one-third of PHC facilities have none of 20 essential medicines.

The results of HeRAMS in 2021 showed that 45% of 172 assessed health facilities were partially damaged, and 2% were fully damaged requiring complete reconstruction. About 14% of the health facilities were partially accessible, mainly because of physical barriers.

In 2022, following relative political and economic stability, almost two-thirds of the PHC facilities assessed had reduced the volume of their work and/or suspended specific treatment services, indicating that Libya has made little progress in strengthening its PHC system since 2017. Barriers to health care include limited access to pharmaceuticals, poor continuity of care, and inadequate referral or access to specialists.

Laboratory Facilities and Molecular Analysis:

COVID-19 pandemic positively impacted DNA-based the diagnostic capacity of at the municipality level; from only one reference laboratory in Tripoli to more than 22 laboratories allover Libya. But, lack of trained professional and financial resources to perform genetic analysis and diagnosis of genodermatoses in Libya still relies on clinical criteria, and research conducted in collaboration with centers abroad. Two genetic studies were conducted in the last decade; genetics of xeroderma pigmentosum[5] and palmoplantar keratoderma in Libyan patients, with the support of Tunisian institutes.

Data collection about genodermatoses at the municipality level:

Data collection continued only in two dermatology departments during the conflict. The live document filled by the LGT was completed for the 1st quarter of 2024 compiling data at the national level for the first time after the conflict as shown on the table below. Although it is not yet reflecting the complete picture, this pilot project will be expanded, and the live document will be updated quarterly. The most common genodermatoses is ichthyosis followed by neurofibromatosis and palmoplantar keratoderma. All the 167 patient records in Benghazi (East) were lost.

Region in Libya	Total numbers registered from 2012-2024	Total numbers registered from 2008-2011
West	369	269
East	9	167
South	5	0
Middle	388	122

Conclusions

Libya was considered at the top of the developing countries in healthcare according to the Human Development Index. The collapse of the healthcare system in Libya was one of the most devastating impacts of the armed conflicts. Although no direct assessment of genodermatoses services was conducted, indirect evidence that armed conflict in Libya was associated with reduced availability and readiness for dermatology services, including genodermatoses. Underdiagnosis and under-recording of genodermatoses were expected during times of armed conflicts because of limited access to dermatology services and the prevailing insecurity. Reduced availability and readiness for dermatology services and under-recording of genodermatoses were reported. The total number of registered cases of genodermatoses in the 12-year post-conflict period is much lower than the number of cases reported in one year before the conflict (766 vs. 1,024). Investigating the link between armed conflict and the incidence of genodermatoses was not possible due to a lack of registration and weak, fragmented health information. Resuming the LGT's activity will improve the national registry of genodermatoses and guide efforts to improve the services for these rare diseases, which were further neglected during the conflict.

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