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EDITORIAL

Diagnosis of Invasive Aspergillus Infections, Challenges of Neurocritical Care and Increased Risk of Hearing Loss in Diabetic Patients

I am glad to introduce this edition of the Journal. The times we are in are quite challenging all across the world and in our sub-regional countries. The journal however continues to maintain the important milestones attained in recent times, such as monthly publications, while striving for improvement on its quality, impact and global relevance. This edition once gain features a diverse array of articles across the wide spectrum of medical and surgical disciplines.

In one of the articles which I'll like to highlight, Ocansey, *et al* proposed a potentially viable solution to the daunting task of diagnosing invasive aspergillosis (IA) in low resource settings. Over 300,000 people are affected by IA each year worldwide, and the mortality rate varies from 30 to 80%.[1] Immunosuppression is a major predisposing factor because the phagocytic and neutrophilic functions of the immune system are impaired. Due to the lack of diagnostic tools, invasive fungal diseases such as IA are a major concern in environments with low resources, particularly in Africa.[1,2] This makes accurate diagnosis difficult and the infections are usually associated with high mortality rates, especially in haematological/oncological patients. As Ocansey and colleagues, *et al* pointed out, Aspergillus galactomannan (GM) enzyme immunoassay (EIA), which is one major diagnostic tool for IA is not readily accessible in many African countries, including Ghana. A potential alternative diagnostic aid called Aspergillus GM lateral flow assay (LFA), has been suggested in the literature. It is a simple and rapid assay which can be more readily deployed in resource-poor settings.[3]

The authors therefore used the LFA, culture and computed tomography scan to screen for and classify IA cases among patients with haematological malignancies in Ghana. Their findings showed that the Aspergillus GM LFA test could detect about two-thirds of IA cases when used alone. This is particularly important in view of the fact that prompt accurate diagnosis is a crucial step in mitigating the morbidity and mortality associated with the disease. They thus recommended that the LFA may be a critical tool for aiding the diagnosis of IA in centres without CT scan or other sophisticated diagnostic facilities.

In another article, Komolofe, *et al* reviewed the state of neurocritical care in Nigeria and highlighted that one of the proximal factors hampering the quality of such care is the paucity of qualified manpower. There are less than 300 neurologists and 130 neurosurgeons serving the entire country of more than 200milion people. Other factors identified as contributing to the complex challenges confronting this critical area of healthcare delivery include a high burden of neurological diseases, lack of pre-hospital emergency care and services, poor healthcare seeking behaviour, inadequate quantity and quality of neurocritical facilities among others.

The authors recommended a number of measures that may potentially help in improving the general state of critical care for neurological conditions in low- and medium-income countries in general and Nigeria in particular. In addition to increased investment of resources aimed at promoting the availability of relevant neurocritical care manpower and dedicated facilities e.g., through public-private partnerships, there are proposed steps that can improve equitable and judicious allocation of available neurocritical care resources. One of such is the development of data-driven guidelines and transparent protocols for the triaging of in-patients that will ensure that the allocation of the limited resources is based on the probability of likely benefit rather that the principle of 'first-come, first-served'. It is impossible to overstate the potential advantages of enhanced neurocritical care. It will lead to improvement in the prognosis and outcomes in neurological patients.

This edition of the journal also showcases the work by Aremu and co-workers on the assessment of hearing loss in diabetic patients using pure tone audiometry (PTA) and otoacoustic emission evaluation (OAE). This is in view of the fact that some evidences have implicated type 2 diabetes mellitus as a risk factor for hearing loss. The potential mechanisms for this association, although controversial, include microvascular disease, acoustic neuropathy or oxidative stress.[4]

The result showed that about 60% of the participants had different degrees of hearing loss in one or both ears. The hearing impairment had a significant association with poor glycaemic control. Even though the outcomes in the diabetic patients were not compared with apparently healthy controls, the finding is in line with the report from a previous large longitudinal study involving close to 140,000 respondents, which showed that type 2 diabetes was associated with a modestly higher risk of moderate or worse hearing loss.[4] The implication is that hearing assessment

need to be considered as part of the routine care of these patients.

I will like to conclude by emphasizing that we continue to welcome high quality articles from across the entire spectrum of the medical and surgical specialities and sub-specialities. We will continually strive to ensure prompt and excellent review and publication of the such manuscripts while improving on the high standard of the journal. We however solicit the support and co-operation of all stake-holders including our contributors, reviewers and editors, and our various institutions.

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Malaria: Burden and Challenges of Eradication

INTRODUCTION/EPIDEMIOLOGY

Malaria, a parasitic disease caused by the genus Plasmodium that is both preventable and treatable, remains one of the leading causes of illness and death worldwide but affects most countries in the tropics and subtropics, with over 3.3 billion people in 106 countries at risk of contracting the disease. Pregnant women and non-immune immigrants are also at risk of dying. There were an estimated 247 million cases of the disease and 619 deaths globally in the year 2021, increasing from 229 million cases and 409,000 deaths in 2019.[1] From the year 1955 to 2023, a total of 42 countries have been certified malaria-free by the World Health Organisation (WHO), mainly consisting of countries in Europe, Asia and the Americas, rekindling our hope of the possibility of eliminating this disease of poverty from Sub-Sahara African countries and especially Nigeria where the disease is most prevalent.[2]

Africa, especially the sub-Sahara, is disproportionately affected by the disease, sharing 95% of the disease burden. Nigeria, the Democratic Republic of Congo, and Uganda account for 44% of the disease burden, with Nigeria remaining the highest-burden country with 26.6% of the global share of malaria cases.[1] Four countries in sub-Saharan Africa accounted for half of the malaria death globally, namely Nigeria, the Democratic Republic of Congo, Tanzania, and Niger. Nigeria, the highest-burden country, has the highest number of deaths from malaria globally, with 31% of the world's total, mostly from children under five.[1]

Economic Implication

Malaria imposes direct and indirect costs on families and the affected countries. To the family, it includes the costs of antimalarial drugs at home; transport fare to the hospital and cost of hospitalisation; lost days of work by caregivers; absenteeism from school; expenses for procuring insecticides, window, and door nets; besides expenses for burial in case of deaths.[3] The government uses a portion of the gross domestic product for public health initiatives to combat malaria, such as insecticide spraying, procurement, and distribution of long-lasting insecticidal nets, providing malarial drugs and test kits, and staffing and maintaining medical facilities.[3,4] Haakenstad, *et al* estimated, based on the national accounting system of 10 countries, the global spending on malaria to be 4.3 billion USD in 2016 (95% UI 4.2–4.4), accounting for both government and out-of-pocket spending per year.[5] Households in Nigeria spend about ₦2,730.46 (US$18.34) on average for treating an episode of malaria.[3]

In comparison, the indirect and direct costs accrued to an episode of malaria in Nigeria are estimated to be ₦1 906.08 billion (US $12,801.07 million), translating to about 8% of the Gross Domestic Product.[4] The paucity of accurate data from affected countries poses many challenges to planners and policymakers in strategies. Quantifying the economic cost of malaria is critical for policymakers to appropriately allocate resources, select control and prevention strategies, and evaluate the cost-effectiveness of interventions.

Stratification by malaria burden, a principle that facilitates optimising the selection of malaria interventions, was recommended for adoption by WHO.[6] This principle is considered the most effective when applied locally by the affected as it supports decision-making and factor into consideration the available financial resources for malaria control. It ought to assist governments in achieving the best outcome despite limited resources. The proposed framework for analysis of the economic cost of malaria by different stakeholders (Healthcare providers, individuals, and community), productivity loss by farmers, civil servants, and students etc.,