Brief Communication COVID-19 in the Midst of Malaria, Cold, and Flu in Nigeria

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ABSTRACT

There is a relationship existing in the nature of management of COVID-19, malaria, cold, and flu ranging from the use of anti-malaria to immune boosters such as vitamin C, herbal/home remedies, large intake of fluids and rest while recommending conventional drugs. This study was done to establish the relationships in terms of clinical symptoms, diagnosis and management. In Nigeria, NAFDAC acknowledged the positive effects of vitamin C enriched plants and vegetables on COVID-19 as discovered by researchers and academicians but discouraged the use of any local products without adequate registration before making claims and usage. There is enormous fear because of the delta variant of COVID-19 because of little or absence of known symptoms, but on the other hand, the majority of affected cases of COVID-19 in Nigeria were asymptomatic and this calls for serious concern in the presence of malaria, cold and flu and that is why the comparison is germane to assist management. The positive relationship would assist in the multiple approach in handlind COVID-19, malaria, cold and flu especially in Nigeria.

Key Words: *COVID-19, Malaria, Cold, Flu, Comparison*

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INTRODUCTION

On July 17, 2021; the Nigerian Presidential Steering Committee on COVID-19 issued a press statement on the COVID-19 third wave following the confirmation of the Delta variant in Nigeria. The statement as well puts six states including Lagos, Oyo, Kaduna, Rivers, Kano, and Plateau states and FCT at alert especially during the Eid celebration [1-3]. COVID-19 having arrived in Nigeria on February 27, 2020 (1 year, 4 months, 2 weeks, and 6 days) have affected 169, 206 persons with 2, 126 deaths putting the fatality rate in Nigeria at 1.26% [4, 5].

On the contrary, Malaria has existed for decades with numerous attentions but not as that of COVID-19. In 2018, WHO [6] puts 93% of global cases in Africa with 28% of them coming from Nigeria where 24% of the death cases took place. Nigeria leads in Malaria burden across the globe. Several efforts to tackle the malaria burden have also been hampered by the COVID-19 pandemic [7-9]. It seems that the similarity of COVID-19 which mostly affects the developed countries is malaria in Africa among the low and medium-income countries (LMICs) especially in Nigeria. COVID-19 has been said to be zoonotic [10] while malaria is parasitic [8, 11] but cold and flu are equally of the viral origin.

MATERIALS AND METHODS

Review on some published works were carried out to assess the relationship especially in the area of similarities towards relating COVID-19, malaria, cold and flu.

RESULTS AND DISCUSSION

From the literatures assessed, there is evidence of clinical features overlap seen in COVID-19, malaria, cold, and flu as shown in **Table 1**. The result presents among other things, the feautures, symptoms, diagnosis, management using the conventional and complementary medicines with instances of vitamin C enriched plants.

There is an overlapping similar feature among COVID-19, malaria, cold, and flu in terms of signs and symptoms,

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diagnosis, and management not minding some issues associated with causes, and control. The case of COVID-19 has created a challenge for health care workers, community members, patients, and patients' relatives due to overlapping symptoms and treatment in Nigeria [12-14]. World Health Organization as recorded by Shi *et al.* [15], gave a marching order for an urgent and aggressive tackling of COVID-19 to ensure that other diseases, like malaria, are not neglected. In aggressive battling of COVID-19 (1.26% fatality) amidst Malaria (20%), Lower Respiratory Infection (19%), HIV/AIDS (9%), Diarrheal Diseases (5%), Road Injuries (5%), Protein Energy Malnutrition (4%), Cancer (3%), Meningitis (3%), Stroke (3%) and Tuberculosis (2%) with cold and flu up to 2% in Nigeria [16], there is urgent need to reassess the health policies and set our priorities as a nation.

The zeal exhibited by government and her agencies towards COVID-19, including the malaria drug administration made Dokpesi [17] to question, "What is the difference between COVID-19 and malaria? When did malaria become synonymous with COVID-19?" These questions were based on the treatment which was mostly antimalarial drugs to him and all around him during COVID-19 treatment. This was further buttressed by the order given by Governor San-nwolu [18] of Lagos state to treat malaria-like symptoms as COVID-19 to flatten the curve as fast as possible. Though controversy exists on Madagascar's COVID-19 organic as clinical trial results are still awaited, the FMOH-Nigeria [19] in their assessment revealed that the organic is mainly an antimalarial drug.

There is no doubt that a relationship exists **(Table 1)** like management of COVID-19, malaria, cold, and flu ranging from the use of anti-malaria, to immune boosters such as vitamin C [20], herbal/home remedies [21-23], large intake of fluids and rest while taking recommended conventional drugs. NAFDAC has equally acknowledged the positive effects of vitamin C enriched plants and vegetables on COVID-19 as discovered by researchers and academicians but encouraged them to register such products adequately before making claims [24].

COVID-19, malaria, cold and flu shares a lot of similarieties in clinical signs and sypmtoms, diagnosis, managements and control available. There is enormous fear because of the delta variant of COVID-19 because of little or absence of known symptoms, but on the other hand, the majority of affected cases of COVID-19 in Nigeria were asymptomatic and this calls for serious concern in the presence of malaria, cold and flu.

The authors hereby recommend:

1. Improved use of non-pharmaceutical intervention (NPIs)
2. Improved personal and environmental hygiene
3. Adequate physical distancing and use of face masks
4. Adequate and recommended use of immune boosters like vitamin C
5. Good use of home remedies especially with the Nigerian plants and vegetables enriched with vitamin C
6. Medical recommendations of anti-malaria when necessary
7. Personal isolation in cases of COVID-19 related symptoms
8. Visiting a good hospital when ill
9. A national policy approach towards an urgent tackling of malaria (integrated vector management-IVM) and other related poverty diseases.
10. Harnessing of Nigerian researched products capable of managing COVID-19 for official approval for use after necessary validation, clinical trial, and registration.
11. Compilations of all complementary and alternative medicines that relieve the symptoms of COVID-19, malaria, cold, and flu for recognition and improvement.

Table 1. Relationship among COVID-19, Malaria, Cold, and Flu

SN	ISSUES	COVID-19	MALARIA	COLD	FLU	AUTHORS
			SYMPTOMS [12-15]			
1	Acquired time/ incubation period(days)	2-14	7-30	1-3	1-4	
2	Arrival/onset of symptoms	Gradual	Gradual	Gradual	Abrupt	
3	Body pains	Sometimes	Sometimes	Slight	Common	
4	Chills	Sometimes	Most times	Uncommon	Very common	
5	Cough	Common	Sometimes	Not common	Common	
6	Diarrhea	Sometimes	Not common	Not common	Sometimes	
7	Difficulty in Breathing	Common	Mild	Mild	Sometimes	

8	Fatigue	Common	Common	Common	Sometimes
9	Fever	Common	Common	Rare	Common
10	Headache	Sometimes	Common	Rare	Common
11	Loss of Appetite	Sometimes	Common	Sometimes	Common
12	Loss of smell	Sometimes	Sometimes	Sometimes	Sometimes
13	Loss of taste	Sometimes	Sometimes	Rare	Sometimes
14	Nasal congestion	Sometimes	Sometimes	Common	Sometimes
15	Respiratory issues	Common	Sometimes	Sometimes	Sometimes
16	Running nose	Sometimes	Sometimes	Common	Sometimes
17	Sore throat	Sometimes	Sometimes	Common	Sometimes
	CAUSES [14, 15]				
18	Causative Agents	Virus	Parasite	Virus	Virus
19	Agents	SARS-COV-2	*Plasmodium spp.*	Rhinovirus Coronavirus RSV Parainfluenza	Influenza
	MEDICAL LABORATORY DIAGNOSIS [25, 26]				
20	Accepted samples	nasopharyngeal swabs, oropharyngeal swabs, throat swabs, saliva, sputum, bronchoalveolar lavage fluid, blood, stool, urine,	Blood	nasopharyngeal swabs, oropharyngeal swabs, throat swabs, sputum, blood.	nasopharyngeal swabs, oropharyngeal swabs, throat swabs, saliva, sputum, bronchoalveolar lavage fluid, blood.
21	Methodology	virological culture, PCR / gene Xpert, ELISA, biosensors, RDTs	Microscopy PCR RDTs	Culture PCR RDTs	Culture PCR RDTs
22	Turnaround time	2Hours to 3Days	20Minutes to 24hours	2Hours to 48Hours	2Hours to 48Hours
	MANAGEMENT [21-23, 27]				
23	Conventional drugs	Yes including Anti-malaria	Anti-malaria	Yes including Anti-malaria	Yes including Anti-malaria
24	Immune boosters	Yes	Yes	Yes	Yes
25	Herbal/home remedies	Yes	Yes	Yes	Yes
26	Rest	Yes	Yes	Yes	Yes
27	Fluid intake	Yes	Yes	Yes	Yes
	VACCINATION [28, 29]				
28	Available	Yes	No	No	Yes
29	Clinical trial	Yes	Yes	No	Yes
30	Immunization ongoing	Yes	No	No	Yes
	SAFETY PROTOCOLS [27]				
31	Enforcement	Yes	No	No	No
32	Hygiene	Highly done	Not considered	Not considered	Necessary
33	Materials	PPE	No PPE	No PPE	PPE necessary

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34	Policies	Very Many	Many	None	Little

PCR- polymerase chain reaction, RDTs- rapid diagnostic techniques, ELISA- Enzyme-linked immunosorbent assay, PPE- Personal protective equipment, RSV- Respiratory syncytial virus, SARS-COV-2- Severe acute respiratory syndrome coronavirus 2

CONCLUSION

There is a relationship existing in the nature of management of COVID-19, malaria, cold, and flu ranging from symptoms, use of anti-malaria, to immune boosters such as vitamin C, herbal/home remedies, and recommended advice to the patients like large intake of fluids, and rest while on treatment. There fear of ravaging variants of COVID-19 could be ameliorated using vitamin C enriched plants and vegetables while adhering to WHO recommended protocols. COVID-19 comparison in the presence of malaria, cold and flu gives germane ideas to assist management.

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