

Will, The Malaria Never Be Eradicated?

It is a question of health specialists, researchers and policy makers and even of the layman simultaneously. The unexpected resurgence of the fatal disease has raised this question further. According to World Malaria Report, 2018, there were 239 million cases in 2010 (95% CI: 219–285 million), with global contribution and effort the cases were reduced to 217 million cases in 2016 (95% CI: 200–259 million). Unfortunately, in 2018, it resurged up to 219 million again.

Similarly, estimated deaths reported in 2010 were 607,000, which decreased up to 451,000 in 2016, with further efforts in 2017 number of deaths decreased up to 435,000 globally. Children <5 years were the most vulnerable group affected by malaria.

Still it cannot be assumed, nor should it be, that malaria will never be eradicated. Since the vaccine development is on the way for reducing transmission in order to accelerate elimination and eradication of the malaria parasite worldwide. Many researches are conducting research to understand the biological process associated with parasite invasion.¹

It is said that the complicated biology and epidemiology of the disease make it ineradicable. However, there is just need for mathematical models. This model will help us to understand different aspects of the disease and will guide our planning, research and interventions in order to make informed decisions for choosing technologies, strategies and population.² For example, understanding and identifying calcium-dependent protein kinases (CDPKs) of the parasite that is the key for eradication. It is important for drug targets development and therapeutic intervention, another positive way to eradicate malaria is “effective surveillance” of malaria cases and deaths.³ It is essential for identifying the areas or population groups that are most affected by

malaria, and for targeting resources for maximum impact. A strong surveillance system requires high levels of access to care, case detection, and complete reporting of health information by both sectors “public and private.” Many studies discussed that eradication of malaria is possible but there are still barriers on the way to eradication and we have to wait in order to see a world without malaria. Firstly, existing interventions for malaria control are not effective due to drug resistance, so, there is need for prophylactic vaccine as additional tool, but there are still challenges to have it.⁴ But the point is that the process is going on. Other prominent challenges are the; drug and insecticide resistance, greater burden of disease, increased mobility of people, less research on *Plasmodium vivax*, relapse of *P. vivax*, which increases the risk of transmission, emerge of a new plasmodium species “*P. knowlesi*,” disruption of malaria control and elimination interventions by wars and natural disasters and lack of political commitment. These factors have potential solution that need collaboration from research to policy and financing.⁵

In 2014, sixty countries reported resistance of mosquitos to insecticides, and five countries reported resistance of parasites to artemisinin, which is the cornerstone of malaria chemotherapy. One another study reported that malaria elimination and eradication is facing; technical, operational and financial challenges. There is huge vulnerable population, which do not have access to health services. Even elimination needs more tools to strengthen the health system.⁶

On the other hand, opponents argue- however, malaria eradication is a noble goal, but it is not simply achievable like eradication of smallpox. It is not wise to use the term eradication since it is

too early to eradicate malaria because resistance to insecticides, even against pyrethroids is increasing, while ACT's effect is also decreasing and still there is no effective vaccination against malaria. These points are undeniable and they give clues that eradication of malaria requires a collaborated effort, holistic plan, and these do not deny possibility of the world without malaria. To conclude, malaria map is shrinking and the world has made considerable progress to wipe out malaria. Theoretically, it is possible to eradicate because it does not have animal reservoir, so it will not return, once it is gone, but more efforts, powerful interventions, new technology and tools are required, in endemic areas, due to emerging threats to the effectiveness of existing interventions. Therefore, in order to enhance efforts toward malaria eradication, it is critical to focus on;

- 1) Breaking the transmission chain through applying effective vaccines and drugs,
- 2) Conducting research, on drugs and to better understand the biology and epidemiology of the disease especially the sources of transmission and invasion mechanism to produce fast and effective progress,
- 3) Removing barriers and challenges which delay our achievements to beat the disease especially tackling disparity and inequity,
- 4) Strong collaboration for research, policy and financing,
- 5) Informed decision making to focus on, for choosing technologies, strategies and population. Lastly, the progress is good and improvements are ongoing with sustainable efforts and commitment. We can reach to our attainable goal "Malaria Free World," but we should not expect it in near future.

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Prof. Saleem M. Rana, PhD

University Institute of Public Health,
The University of Lahore, Lahore, Pakistan