SUMMARY AND CONCLUSION

Well said by Eli Schwartz that Malaria – A Disease that Refuses to Die but Continues to Kill.

Malaria is a mosquito-borne infectious disease of humans and other animals caused by minuscule organisms (protists), belonging to the genus Plasmodium, ensconce themselves inside our red blood cells. It begins with a bite from an infected female mosquito (Anopheles Mosquito), which introduces the protists via its saliva into the circulatory system, and ultimately to the liver where they mature and reproduce. Malaria is typically diagnosed by the microscopic examination of blood using blood films, or with antigen-based rapid diagnostic tests. Modern techniques that use the polymerase chain reaction to detect parasite DNA have also been developed, but these are not widely used in malaria-endemic areas due to their cost and complexity.

Finding healing powers in plants is an ancient idea. WHO report states that although there is a widespread use of traditional herbal remedies in the management of malaria, scientific understanding of these plants is largely unexplored. By referring to some recent literatures, data were collected about plants used for the treatment of various diseases having clinical symptoms similar to fever or malaria like diseases..

Eight medicinal plants were selected for preliminary antiplasmodial screening, based on their traditional claims for the treatment of fever and malarial fever. Alcoholic and aqueous extracts of these selected plants were subjected to antiplasmodial activity using schizont maturation inhibition assay. As per the WHO guidelines, among the plants screened aqueous extract of C. procera and V. negundo exhibited considerable activity.
whereas, alcoholic extract of *E. foliata*, *L. camara*, *S. acuta* and *S. rhombifolia* exhibited considerable activity.

Haemoglobin and total protein concentration of the test samples were also carried out and the results were showing promising antiplasmodial effects of the extracts. The initial decrease in the Hb% and increase in the total protein contents of the untreated samples could reverse the effects after the treatment.

The HPTLC separation and antioxidant activity of the secondary metabolites present was concluded with reference to the phytochemical studies conducted and the antioxidant compounds which may be responsible for the antiplasmodial activity were highlighted with reference to the *Rf* values and the area of the separated compounds noticed in the HPTLC and standard *Rf* calculating methods.

Method developed by Trager and Jensen for *in vitro* continuous cultivation of *P. falciparum* has always directed malaria research. Drug screening and resistance, vaccine development, mechanisms of pathogenesis, development, genetics, and molecular and cellular biology are areas that have been impacted by use of in vitro cultivation of the malaria parasite. In our laboratory due to the difficulty in obtaining human serum, we have modified the *in vitro* maintenance of the *P. falciparum* isolates using the same plasma of the O*+ve* blood used for the isolation of fresh RBCs.

The IC*50* values of 15 µg/ml or less for the aqueous and alcoholic extracts were further extracted with various polar and non-polar solvents and we could achieve an IC*50* values ranging from 3.9 µg/ml to 12 µg/ml showing that there may be promising antiplasmodial agents present in the plants selected for the study.
Summary and Conclusion

In conclusion, the study carried out on the antiplasmodial activity of the specific plants selected, will add a new dimension to the targeted anti-malarial drug formulations. The advantage of this phyto-therapeutic approach is to develop an effective, low-cost, least multi-drug resistance agent, which is also safe, less-toxic and more easily available. The present study has met these objectives, to yield semi-purified extracts that could control the Plasmodium growth and multiplication, at the erythrocytic stages. This meets the final aim to control the menace of Malaria.