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Nature of Host Parasite Adaptation: A Comprehensive Review Article

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Review Article

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ABSTRACT

Among all arthropods, mosquitoes are indubitably important to human beings to their consequence in which acting as vectors for many infective disease and also act as primary and sometimes secondary host for many viruses and protozoan parasites, many of which shows impact considerably on human and veterinary health. In the present review article represent the brief discussion on the relation with genetic diversity with the parasite with the mosquitos in vice-versa. It associates with high-risk level during the seasonal outbreaks demonstrated the potential vulnerable to human communities infected by the mosquito vectors. In present review will open debate discussion, how the protozoan parasite spread only through Anopheles species and viral parasite spread through only by Aedes Species. Let us understand some unanswered proofs to understand the genetic analysis of malaria.

INTRODUCTION

Insects are known for a transmission of various disease-causing organisms to humans and other living organisms related to the veterinary, some of them especially like mosquito borne diseases which cause most dreadful disease like Malaria, Dengue, Japanese encephalitis and many more. The distribution and abundance of various mosquito vectors is important in the determination of disease prevalence in disease-endemic areas. The vectors like mosquitoes have the shows the sensitivity and specificity to the particular disease or a particular virus. Female Anopheles mosquitoes which acts a vector for malaria which is a still life threatening about forty percent of the world's population were affected with that and well as Dengue which comes second among the mosquito borne disease which kills nearly about 10-12% percent of the population, majority of affected person were African natives, then followed by Asian people and then native of Latin American [1-5].

Study of Causative Organism

Despite of over a century attempts to eradicate or control vector borne disease, the vector borne diseases remains a still a vital and creating danger to the general prosperity and financial change of countries in the tropical and subtropical zones of the world. Around 40% of the aggregate people live in endemic zones. There are a common 300–500 million cases and up to 2.7 million infected with vector borne disease. The mortality levels of the infected people are remarkable in sub-Saharan Africa [6-9], where children under 5 years of age record for 90% of all infected with insect borne disease. Human wild fever is carried on by infected with intracellular parasites of the family Plasmodium sps that is transmitted by Anopheles mosquitoes. Of the four sorts of Plasmodium that damage the each individual of human beings, is resulting in most fatal diseases. Immunity to against malarial and insect, the decay of general structure, masses movements, political turmoil, and steady changes are adding to the spread of infection. In countries with endemic stage fever, the yearly related change rates over a 25-year time cross were 1.5% lower than in various countries [9-15]. This incites the cemented effect of the lower the yearly budgetary yield in a wild fever endemic country was a half diminishment in the per capita GDP showed up contrastingly in association with a non-

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malarious country. Late studies suggest that the measure of intestinal enduring cases may twofold in 20 years if new methods for control are not made and finished [16-25].

Based on the availability of a literature revealed only that the causative organism are specific to specific in relation:Dengue virus show specificity Aedes sps, Plasmodium sps show a specificity Anopheles sps Japanese encephalitis virus show to Culex sps, Babesiosis specific to Tick and also Tick-borne encephalitis virus through the Tick. However, they were many insects which act like a vector to communicable or non-communicable diseases [4,9,16,26-32].

New Target on understanding the parasite drugs

Mohammed Hassan [33] have presented his work with a title "*The protein and genomes and its implication as malaria parasites drugs*" at International Conference on Medical Parasitology and Zoology, to understand the impact of protein as malarial drugs to eradicate the malaria or insect borne diseases. The field of bio discovery and plant based pesticides steadily progresses and the development of botanical insecticides have become more rigorous in recent years with calls for more standardization. In recent years, a large number of botanical products, including plant extracts, essential oils, and pure metabolites, have been proposed for eco-friendly control of mosquito vectors and other blood-sucking arthropods. Mosquito larvae live in a wide variety of aquatic environments, which makes them attractive targets for insecticides [34-40].

The field of bio discovery and plant based pesticides steadily progresses and the development of botanical insecticides have become more advanced in recent years with calls for more standardization. In recent years, a large number of botanical products, including plant extracts, essential oils, and pure metabolites, have been proposed for eco-friendly control of mosquito vectors and other blood-sucking arthropods [41-50]. Mosquito larvae live in a wide variety of aquatic environments, which makes them attractive targets for insecticides. Topics of understanding the parasite 2nd International Conference on Parasitology towards the Parasite Remedies which helps in the understanding the most widely-used mosquito control strategies at present use various formulations of chemical insecticides to kill larvae and adults [51-58]. However, these tools are not always efficient, applicable, or available. Increased resistance of mosquitoes to chemical insecticides and the cost of these interventions make them prohibitive in many settings

Considering these drawbacks, pursuing informed, efficient ways of using chemical insecticides is essential. In the formulation process it is important to choose the best compounds, including synergists in order to achieve safety, environmental and economic benefits [60-66]. Our results support the conclusion that dillapiole is useful for public health applications targeting mosquitoes when used together with pyrethroids.

Similar to the observations with *Aedes aegypti*, the association α-cypermethrin/dillapiole increased mortality of A. albitarsis. No statistically significant difference was noted at 15 minutes. The association α-cypermethrin/dillapiole caused 100% mortality between 60 and 75 min, while alive mosquitoes were still present at 90 minutes of exposure in the assays performed with each separate compound [67-75]. The association of these two compounds shortened the time necessary to kill mosquitoes, estimated as TL50 and TL90. These results further support our conclusion that dillapiole is useful in targeting mosquitoes when used together with pyrethroids.

An essential component identified with the improvement of Anopheles melas is the relationship between the larval environment of this species and the saltiness of its reproducing into adult form of mosquitoes [76-79]. It is this marvel which legitimizes the diminishing of Anopheles melas amongst October and December while thickness of Anopheles gambiae sensu stricto expanded. In fact, the last quarter of the year is the time of surge and subsidence. In this manner, the tidal pond of Ouidah is loaded with a lot of new water fundamentally from the northern Benin amongst September and October that adjusts Anopheles melas hatchlings environment. The desalination brings about a general reduction in mosquito thickness particularly Anopheles melas. Amid retreat (November-December), the stores left by the withdrawal of water are good for Anopheles gambiae sensu stricto and clarifies the high thickness of Anopheles gambiae sensu stricto saw amid this period [79-83]. In February, with the expansion in saltiness of the tidal pond of Ouidah, we recorded 92.18% of *Anopheles melas*.

The seasonal and temporal variation of Anopheles melas density in our study area was similar to that observed by Akogbeto [84]. The outcomes of the study showed Anopheles melas [81] that is active during the in the dry and raining season. Similar results were observed in Eastern Ghats which predominant in rainy season respectively.

The presence of a relatively high density of Anopheles gambiae may also be due to the urbanization of the traditional lagoon area and the reduction of mangrove (mangrove wood exploitation for the production of salt), natural

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habitat of *Anopheles melas* [85-90]. The change of the conventional environment great to biology Anopheles melas makes an irregularity contrasted with the underlying populaces of vectors and results in a decline of Anopheles melas and an expansion in Anopheles gambiae sensu stricto thickness. The salinization of the tidal pond of West Bengal and Andhra Pradesh is additionally dynamic, and helps Anopheles gambiae sensu stricto adjustment to high saltiness. A research center review could be considered to indicate the resistance furthest reaches of both species [91-94].

CONCLUSION

Whether reclamation of natural in urban streams would give reasonable rearing territories for some mosquitoes was not clear yet It was in this manner essential to decide how adjusted stream conditions influence mosquito environment. Month to month information on water quality and larval thickness were gotten to determine the impacts of waterway frameworks on the dispersion and plenitude of youthful mosquitoes in two coastal cities in Eastern and Western India. Altogether, five species inside two genera of mosquitoes were gathered and recognized in habitat with vegetation from three positive waterways. *Culex pipiens* was the most bottomless and widely distributed species [95-98]. Another species (*Culex fuscanus*) was accounted for in specific regions. Physico-chemical parameters of waterway water were vital, however not by any means the only, arrangement of impacts on juvenile mosquito breeding. Sea-going vegetation could improve the probability of mosquito reproducing while manufactured aeration might keep the approach of mosquitoes. Moderate moving water may be another potential minor habitat type for some Culex and Aedes albopictus. Variety of stream framework with environmental rebuilding might influence the plenitude and circulation of juvenile mosquitoes [99,100].

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