Equatorial Viruses Equate to Trouble!

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Abstract

Many tropical viruses are arboviruses (arthropod borne). Dengue, a flavivirus, causes high fever and 20% death. Chikungunya, an alphavirus, causes systemic symptoms like other tropical arboviruses. Lassa, an arenavirus, causes severe head and abdominal pain and hemorrhage; it is a robovirus (rodent spread). Bunyaviruses cause systemic symptoms and high levels of morbidity and mortality. They can be arboviruses or roboviruses; different types can be found anywhere. They can infect and result in destruction of any system, cause fever and pain that is hard to distinguish clinically from that of other arboviruses, and spread widely. Hantaviruses cause hemorrhagic fevers worldwide. Oropouche, a virus causing considerable consternation presently, as it is spreading northward rapidly, causes high fever and severe systemic symptoms; while mortality is not high, morbidity, sometimes life-long, is severe. All viruses above are roughly spherical, ~40-150 nm, enveloped with outside spikes, have isometric 25-30-nm nucleocapsids, and cannot be distinguished by negative staining. They differ genetically and thus, replicate differently. Filoviruses (e.g., Ebola) are enveloped, up to ~1400 nm x 80 nm, and cause hemorrhagic fevers ~50-95% fatal. Paramyxoviruses (e.g., Nipah) cause severe lung and systemic diseases, and are transmitted to humans by animals. Some are susceptible to Ribavirin; most have only supportive therapy; diagnosis is crucial as hemorrhagic fevers are exacerbated by NSAIDs. Vaccines are available for only a few. HIV, rotavirus, and calicivirus are worldwide but more prevalent and serious in populations battling tropical diseases. The latest concern is Mpox (monkeypox), which is spreading rapidly and widely.