Tecovirimat for the Treatment of Human Pathogenic Poxviruses: Focus on Monkeypox

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On January 10, 2022, SIGA Technologies, Inc. received approval from the European Medicines Agency for the Marketing Authorization Application for oral tecovirimat, which follows on the US FDA approval in July 2018 for the same formulation of tecovirimat, under the brand name TPOXX. The EMA approval includes indications for smallpox, monkeypox, cowpox, and vaccinia complications following vaccination against smallpox, which represents the major human pathogenic orthopoxviruses. Smallpox has been eradicated as a naturally occurring disease yet remains a dire threat as a biowarfare or bioterror agent. Cowpox and vaccinia usually cause mild self-resolving diseases although they may be fatal in immunocompromised hosts. Monkeypox is an emerging public health threat with cases identified in 11 African countries, where it is considered endemic, and disease has been exported to the United Kingdom, United States, Israel, and Singapore. While less severe than smallpox, the case fatality rate ranges from 1% to 10% depending on the virus clade. The growing number of cases in Africa and the exportation outside the continent highlight the pandemic potential of this virus. The incidence of disease is expected to increase due to continuing habitat encroachment and the increasingly immunologically naïve population no longer protected by smallpox vaccination. Until tecovirimat approval, there was no approved therapy for monkeypox and patients were provided supportive care only. Prophylactic vaccination is not practical under the*current* threat situation. Live replicating vaccines such as ACAM2000 carry inherent risks that may exceed the risk of monkeypox at the current level of endemicity and modified vaccinia Ankara (MVA)-based vaccines (which are much safer) also are not ideal for use at the current threat level either. SIGA has entered into a collaboration with Oxford University to support an Expanded Access Protocol to use tecovirimat to treat monkeypox in Central Africa which should provide important insights into the effects of tecovirimat when delivered in a real-world situation. Stockpiling and availability of an effective antiviral, such as tecovirimat, for the treatment of monkeypox may reduce disease burden and along with other public health measures reduce the likelihood of an endemic disease becoming pandemic.