Human Myxoma Virus - Ground Truth

PATHOGEN TYPE:

Human Myxoma Virus is a member of the genus *Leporipoxvirus*. It is a mutation of the myxoma virus which causes myxomatosis in rabbits; a fatal disease which first attacks the rabbit's eyes, ears and genitals.

ORIGIN AND EMERGENCE DETAILS:

The first known human hosts of this novel pox virus were in Svitnar, central Europe, where intensive rabbit farming is practised for both meat and skins.

An extremely transmissible new strain of myxoma virus was allowed to spread through these cage-bred rabbit populations because it did not prove lethal, instead confining its damage to the animal's eyes. The rabbits were blinded, left with oozing wounds where their eyes would have been, yet their meat and pelts were intact and saleable.

The new myxoma virus spread throughout farms in the region - possibly transferred by inspectors - and was well understood but hidden from the general public until it made the jump to humans.

It is thought that the first human hosts would have been workers involved with the slaughter and skinning process but this is unconfirmed. The first reported cases were among the children of a Svitnar Kindergarten.

PATHOGEN CHARACTERISTICS:

Human Myxoma Virus attacks the superficial tissues of the globe of the eye; namely the conjunctiva and cornea. It enters the host cells, dividing rapidly and causing the disintegration of these tissues with a high and rapidly-spreading viral load. Within hours of infection, the conjunctiva and cornea ulcerate. Hours later, the integrity of the globe is breached, causing permanent loss of vision.

It is spread by physical contact, able to survive on hard surfaces for several hours and longer on human tissues.

The virus is brick-shaped with a double-stranded DNA genome. It exhibits surface proteins similar to other viruses endemic within the human population, most notably the herpes simplex virus, HSV-1. For this reason, most adults will not present symptoms of pathology if they have previously been exposed to such viruses.

The victims of the disease caused by this virus are children who lack inherent immunity - most commonly of preschool age - and immunocompromised adults.

The disease was named Juvenile Human Myxomatosis but is known by the general public by many names including 'rabbit pox', 'the myxies' and simply 'the pox'.

OTHER IMPACTING FACTORS:

It was possible to develop effective treatments within the first year of the pandemic by treating topically with an antiviral medication derived from commonly-used acyclovir.

The acyclovir molecule was adapted so that it caused less irritation to sensitive human tissues, allowing delivery in a suspension with an increased concentration of antiviral to arrest high viral load. Improvements to the medicament's substantivity prolonged the efficacy of each application.

Patients responded poorly to this new medicament, despite the findings of in vitro studies, until it was discovered that the affected eye tissues became incredibly photosensitive during infection and continued to ulcerate if exposed to light.

Once understood, this was remedied by soaking dark-coloured gauze in the antiviral solution and bandaging the wet gauze around the patient's head. This required renewal every two hours. Patients treated at the onset of symptoms could expect to make a complete recovery.

This essay is set 18 months after the initial outbreak of 'the pox'. Developed nations have perfected their treatment protocols and established a plentiful supply of the necessary antiviral medication. Prophylactic topical application of antiviral medication has become mandatory for all children of preschool and school age.

Meanwhile, developing nations such as Mutapaia where the essay is set, are unable to procure the antiviral necessary to provide treatment, meaning that schools cannot reopen and children's futures are being irreversibly damaged even if they are able to avoid infection. Due to isolation and a lack of exposure to other viruses endemic in the population, the average age of children infected has increased, as has the size of the vulnerable population.

Driven by desperation - and sometimes corruption - governments are forced to buy inadequate supplies from countries such as Shiam that are producing unregulated and inadequate copy-cat medications that often contain nothing more than antihistamines such as sodium cromoglicate - used commonly in the management of hay fever but completely ineffective for treatment of Juvenile Human Myxomatosis.

It has become a disease of poverty.