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Pathology Newsletter
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Rabies

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Introduction

Rabies is a zoonotic disease endemic to KwaZulu -Natal, Eastern Cape and Limpopo provinces. Most cases in the past have been demonstrated in domestic dogs, but the virus has also been transmitted by mongooses, black-backed jackals, bat-eared foxes and various other wildlife and domestic species.

The virus is spread through exposure to an infected animal's saliva, which can be introduced by biting, scratches, licking of broken skin or grazes as well as inoculation into mucous membranes of the nose or mouth.

Therefore, within this context, transmission is almost exclusively from animal to human.

Disease pathogenesis and course

The virus is introduced into the body through direct inoculation. Once it enters the peripheral nervous system, the infection is established, and no treatment options are available (figure 1).

For this reason, early aggressive response is essential in disease prevention.

Control and prevention

Primary prevention is through vaccination programs of dogs and cats on an annual basis. Exposures should be managed immediately (figure 2).

Testing

All testing and case monitoring should be performed in consultation with the National Institute of Communicable Diseases (NICD) and Department of Health (DoH).

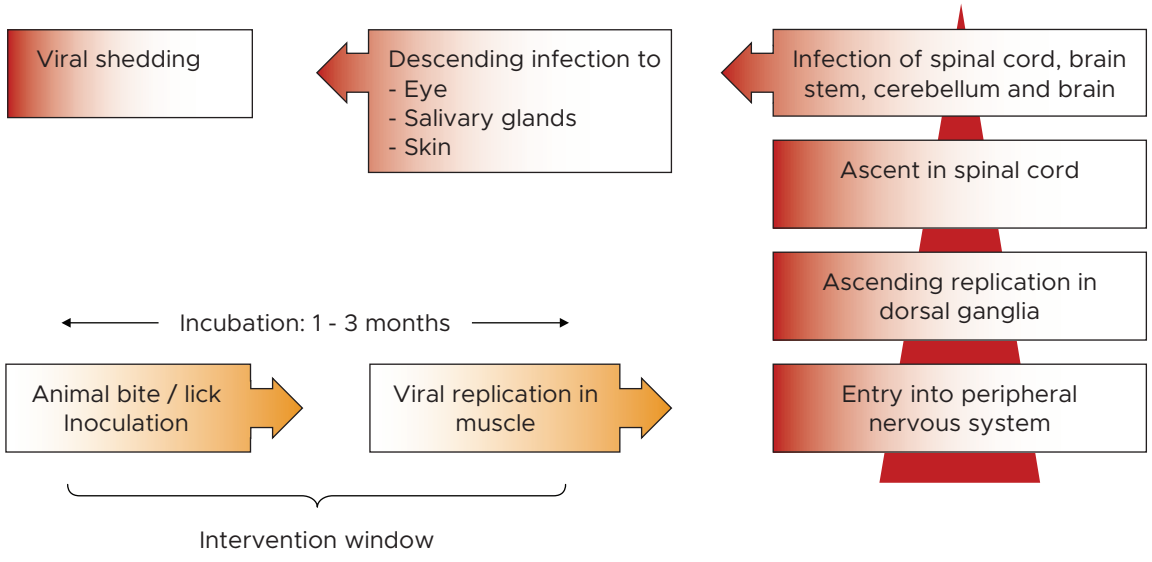

Figure 1. Disease pathogenesis of Rabies as the virus progressively spreads though the nervous system.

Follow-up

Follow-up testing is essential to ensure appropriate patient response and compliance (figure 2).

Wound washing
Wash with soap and water and flush thoroughly for 5 - 10 minutes with water.

Seek medical attention
Post-exposure Prophylaxis:
1. Rabies immunoglobulin.
2. Rabies vaccination.
3. Prophylactic Antibiotic therapy.

Monitoring
The animal in question can be submitted for testing.
Monitoring exposed person for symptoms.
1. Parasthesia at inoculation site as early sign.
2. Acute neurological symptoms.
3. Progressive over 7 - 10 days.

Diagnosis
PCR performed on saliva, CSF or skin samples ante-mortem.
Brain Antigen testing post-mortem.

Figure 2. Approach to a patient following possible exposure to rabies.

References

1. https://www.nicd.ac.za/diseases-a-z-index/rabies/
2. https://www.nicd.ac.za/wp-content/uploads/2021/08/Human-rabies-prophylaxis -guidelines_DRAFT_2021.pdf

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