Red-bellied black snake (*Pseudechis porphyriacus*) envenomation in 17 dogs: diagnosis and treatment with a new tiger-brown snake antivenom

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This report describes the diagnosis and treatment of 17 cases of red-bellied black snake envenomation (RBBS; *Pseudechis porphyriacus*) in dogs in South Eastern Queensland. Cases were prospectively enrolled for treatment with Tiger-Brown Snake Antivenom 8000 units (Padula Serums Pty Ltd, Australia. APVMA Approval No. 83903/109217). Clinical diagnosis of RBBS envenomation was made by either SVDK, snake identification and owner observed dog-snake interaction. RBBS venom specific antigen ELISA was used to retrospectively quantify venom in frozen serum and urine¹.

Dogs received either 1 (47%; 8/17), 2 (41%; 7/17) or 3 (12%; 2/17) vials of antivenom. Mechanical ventilation was required in 6% (1/17) cases, whole blood transfusion in 12% (2/17), tissue swelling at the bite site occurred in 53% (9/17) and facial palsy in 12% (2/17). One dog was euthanised, overall 94% (16/17) survived to hospital discharge. Notable clinicopathological changes pre-antivenom included variable haemolysis, elevated CK, pigmenturia and mildly prolonged ACT 138 ± 10 s (range 93–206 s). FBE was performed in 5/17 cases at 24h post-envenomation and revealed spherocytosis (5/5) and anaemia (5/5) which resolved without the use of corticosteroids. Pre-antivenom, mean RBBS venom antigen concentration was 12 ng/mL (range 0.9 – 46) in serum and 80 ng/mL in urine (range 29 – 255); venom was undetectable in serum post-antivenom.
The antivenom was effective for treatment of RBBS envenomation and excellent prognosis obtained despite the stated specificity for tiger and brown snake. Some dogs may also require ventilatory support\(^2\), blood transfusion\(^3\), additional antivenom\(^3\) and prolonged hospitalisation. Urine is a more reliable matrix for venom detection to confirm RBBS envenomation due to higher venom levels.

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**References**

