IOCT 2025 Conference

The 3rd International Online Conference on Toxins

10–12 September 2025 | Online

MDPI

Perinatal screening of *Crotalus durissus terrificus* venom in rats

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INTRODUCTION & AIM

The high rate of accidents involving venomous animals, especially in emerging countries, represents a serious public health problem, with crotalic being the most lethal and the highest rate in Brazil. The venom of the ***Crotalus durissus terrificus*** snake is composed of proteins that exert neurotoxic, myotoxic and coagulation effects, causing secondary nephrotoxicity and hepatotoxicity. Serotherapy is the most most appropriate method of treating crotalic envenomation. Despite the high rate and severity of accidents, there are very few studies on the effect of venom and/or serum on the fetus in the event of an accident involving a pregnant woman.

METHOD

CEUA nº 5747200919

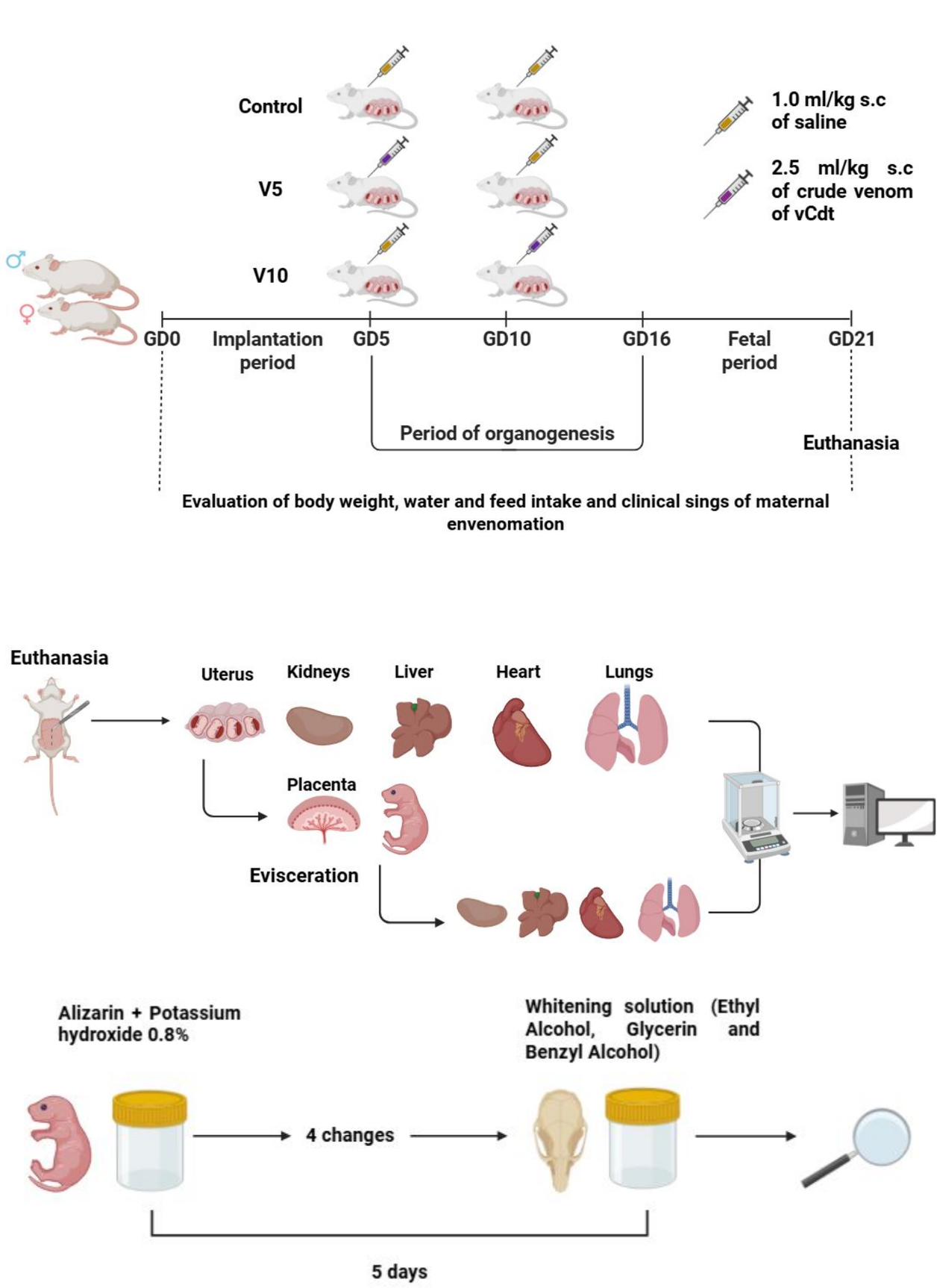

Figure 1. Experimental Design. GD = Gestacional Day; vCdt= *Crotalus durissus terrificus* venom.

RESULTS & DISCUSSION

Table 1. Average weight of rats injected with either saline or crude venom on the 5th or 10th day of gestation.

Time Period (Days)	Control (n=8)	V5 (n=6)	V10 (n=8)
0-5	18.63 ± 2.883	19.13 ± 1.564	14.58 ± 1.739
5-10	11.70 ± 1.323	12.53 ± 2.467	15.35 ± 1.945
10-16	31.51 ± 1.533	30.80 ± 2.546	3.975 ± 7.667*
16-21	67.29 ± 3.783	63.77 ± 2.033	61.33 ± 5.423

Data are expressed as mean ± SEM * p<0.05 (significant difference compared to the control group).Student's t-test.

Table 2. Average weight of fetuses and placentas of male and female rats injected with either saline or crude venom on the 5th or 10th day of gestation.

Parameters	Control (n=99)	V5 (n=73)	V10 (n=88)
Weight (♀)	5.2 ± 0.056	5.4 ± 0.055*	5.0 ± 0.055*
Weight (♂)	5.5 ± 0.049	5.7 ± 0.053*	5.3 ± 0.072*
Placenta (♀)	0.48 ± 0.012	0.48 ± 0.010	0.50 ± 0.017
Placenta (♂)	0.50± 0.0095	0.52 ± 0.010	0.55 ± 0.013*

Data are expressed as mean ± SEM * p<0.05 (significant difference compared to the control group).Student's t-test.

Table 3. Variation in fetal weight of some internal organs of male and female fetuses of rats injected with either saline or crude venom on the 5th or 10th day of gestation.

Parameters	Control (n=45)	V5 (n=38)	V10 (n=43)
Kidney (♀)	0.048 ± 0.0023	0.055 ± 0.0012*	0.038 ± 0.0024*
Kidney (♂)	0.052 ± 0.0022	0.055 ± 0.0011	0.045 ± 0.0029
Liver (♀)	0.44 ± 0.016	0.49 ± 0.014*	0.39 ± 0.012*
Liver (♂)	0.47 ± 0.016	0.51 ± 0.017	0.45 ± 0.015
Heart (♀)	0.036 ± 0.0026	0.041 ± 0.0017	0.032 ± 0.0018
Heart (♂)	0.043 ± 0.0058	0.044 ± 0.0015	0.031 ± 0.0036
Lungs (♀)	0.15 ± 0.0078	0.16 ± 0.0059	0.14 ± 0.0061*
Lungs (♂)	0.17 ± 0.044	0.16 ± 0.0034	0.16 ± 0.0097

Data are expressed as mean ± SEM * p<0.05 (significant difference compared to the control group).Student's t-test.

Table 4. Incidence of skeletal malformations and anomalies in the fetuses of rats injected with either saline or crude venom on the 5th or 10th day of gestation.

Skeletal Malformations and Anomalies	Control	V5	V10
Number of affected fetuses	0/45	6/38	0/43
Number of affected litters	0/8	4/6	0/8

Fisher's exact test

CONCLUSION

This study demonstrated that ***Crotalus durissus terrificus*** venom has embryotoxic potential during embryogenesis and organogenesis.