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EVALUATION OF PLATELET FUNCTION AND OF SERUM FIBRINOGEN LEVELS IN PATIENTS BITTEN BY SNAKES OF THE GENUS Crotalus. PRELIMINARY REPORT.

Izolete A. THOMAZINI (1,7), Fabio C. IUAN (2,7), Iracema CARVALHO (3), Denise H. HERNANDES (4), Ivanete F. AMARAL (4), Paulo C.M. PEREIRA (5,7) & Benedito BARRAVIERA (6,7).

KEY WORDS: Crotalus; Fibrinogen; platelet; Snakes.

Bites by snakes of the genus **Crotalus** induce severe signs and symptoms in view of the diversity of effects the venom has on the human organism[3]. Different venom fractions act on the neuromuscular junction[10], skeletal muscle[4], kidneys[2] and blood[8]. In the last case, changes in red blood cells, white blood cells, platelets and coagulation factors are observed[8].

"In vitro" and "ex vivo" studies have demonstrated changes at the coagulation factor level[1], but platelet changes have been demonstrated only "in vitro"[5,6,9].

In the present study, we evaluated the effect of **Crotalus** venom on serum fibrinogen levels and on platelet number and function in 6 patients bitten by **Crotalus durissus terrificus** and admitted to the Infectious and Parasitic Diseases ward of the Faculty of Medicine of Botucatu. All patients (5 men and 1 woman) were farm laborers aged 26 to 60 years.

Serum fibrinogen levels were measured by the method of Ratnoff, Menzie & Baltimore[7]. Platelet function was evaluated with a Zenith aggregometer after stimulating aggregation with 1 and 3 µm ADP, collagen and epinephrine. The evaluation was performed before and 24 and 48 hours after specific treatment with anticrotalus serum and repeated 40 days later.

Analysis of the results shows that serum fibrinogen levels were decreased in most cases before treatment , with a tendency toward normalization after 48 hours (Table 1).

Platelet numbers were decreased in only 1 patient though the remaining 5 showed values close to the lower normal limit.

Platelet aggregation stimulated with 1 µm ADP was altered in all patients before treatment, with a tendency towards normalization 40 days later. When stimulation was done with 3 µm ADP, collagen and epinephrine, most patients showed normal aggregation (Table 2).

On the basis of these preliminary results, we may suggest that **Crotalus** venom interferes with platelet function possibly through a direct action and/or through an indirect action based on fibrinogen consumption, with consequent elevated concentrations of fibrinogen degradation products.

(1) Bióloga da Divisão de Hemostasia, do Hemocentro do Hospital das Clínicas da UNESP de Botucatu.
(2) Prof. Auxiliar de Ensino - Disciplina de Hemoterapia, Depto. de Urologia da Faculdade de Medicina de Botucatu - UNESP.
(3) Bióloga estagiária do Curso de Aprimoramento de Estagiários Não-Médicos da FUNDAP. Faculdade de Medicina de Botucatu - UNESP.
(4) Técnicos de laboratório.
(5) Prof. Assistente do Departamento de Moléstias Infecciosas e Parasitárias da Faculdade de Medicina de Botucatu - UNESP.
(6) Prof. Assistente Dr. dô Departamento de Moléstias Infecciosas e Parasitárias da Faculdade de Medicina de Botucatu - UNESP.
(7) Pesquisadores do "Centro de Estudos de Venenos e Animais Peçonhentos da UNESP".
Address for correspondence: Dra. Izolete A. Thomazini.
Rua Floriano Simões, 497.
18600 Botucatu, São Paulo, Brasil.

TABLE 1

Distribution of serum fibrinogen levels and platelet counts among the patients studied.

Patients	Serum fibrinogen level normal range: (200 a 400 mg%) / Platelet count (Normal 150 a 400 x 10^3)			
	Before	24hs	48hs	40 days
1	161 / 145 x 10^3	156 / 212 x 10^3	227 / 198 x 10^3	236 / 239 x 10^3
2	189 / 252 x 10^3	—— / 240 x 10^3	—— / ——	269 / 214 x 10^3
3	247 / 188 x 10^3	210 / 165 x 10^3	139 / 172 x 10^3	111 / 242 x 10^3
4	177 / 155 x 10^3	—— / ——	269 / 202 x 10^3	310 / 182 x 10^3
5	131 / 254 x 10^3	161 / 185 x 10^3	—— / ——	242 / 241 x 10^3
6	131 / 191 x 10^3	177 / 220 x 10^3	232 / 206 x 10^3	301 / 235 x 10^3

TABLE 2

Stimulation of platelet aggregation with 1 and 3 μm ADP for the patients studied.

Patients	Stimulation of Platelet aggregation with 1 μm ADP/ 3 μm ADP (%)			
	Before	24 hs	48hs	40 days
1	0.0 / 0.8	0.0 / 52	50 / 50	63 / 77
2	0.0 / 78	71 / 75	— / —	64 / 76
3	0.5 / 44	0.0 / 17	0.0 / 0.0	17 / 68
4	21 / 57	— / —	20 / 72	0.3 / 71
5	0.8 / 63	0.6 / 59	— / —	34 / 29
6	0.4 / 65	27 / 67	0.9 / 58	44 / 82

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