

NEUTRALIZATION ON VENOMS FROM FIVE *BOTHROPS* SPECIES, PROVIDED BY TWO THERAPEUTIC ANTIVENOMS USED IN ARGENTINA

We studied the neutralizing capacity of three anti-*Bothropic* AVs (antivenoms): 1) BIV, produced by immunizing horses with venoms of *Bothrops alternatus* [Ba] and *B. diporus* [Bd] and 2) TTV, produced by immunizing the both mentioned venoms) plus *B. jararaca* [Bja] and *B. jararacussu* [Bju] venoms. Their neutralizing capacity on lethality, hemorrhagic, coagulant (plasma), proteolytic and PLA₂ activities of Ba, Bd, Bn, Bja and Bju venoms, were studied. In addition the toxicity of Bja and Bju venoms on myoblast C2C12 cells and their neutralization by AVs was assayed. In all the cases BIV and TTV neutralized all the activities of the venoms. Volumetrically the neutralizing doses (mg of V [venom] neutralized by ml of AV [antivenom]), TTV showed more potency. However, when the neutralizing potency was expressed as the mg of AV, the doses turn very close. The ED_{50s} (expressed as mg of AV) for Ba V were= 2.0(1.9-2.2) for BIV and 2.2(2.1-2.3) for TTV. For Bd= 1.9(1.7-2.1) for BIV and 1.4(1.3 to 1.6) for TTV; Bn= 2.7(2.0-2.9 for BIV) and 1.9(1.7-2.1) for TTV; Bja=1.5 (1.5-1.6) for BIV and 1.4(1.4-1.5) for TTV; Bju=3.8(3.4-4.2) for BIV and 3.5(3.4-3.7) for TTV. The hemorrhage and myotoxicity in C2C12 was well equally neutralized ($p < 0.05$). PLA₂ activity (radial hydrolysis of phospholipids and indirect hemolysis) and plasma coagulation were neutralized in all the cases and all the doses got close when were considered as the amount of AV protein required for neutralizations. Bja and Bju venoms were well neutralized by the BIV, which does not include them in their immunogenic mixture while Bn V was well neutralized by both AVs. The results showed that the cross neutralization on this venoms is high. Differences in neutralization, considering the volume of AV required to neutralize, were strongly related with the amount of specific F(ab')₂ fragments in the AVs.