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Microplasmin JG: Treatment to Thrombotic Diseases without Risk of Bleeding Events

Agustín Joison[*] and Federico Gallo

[*]*Córdoba Catholic University, Argentina.*

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ABSTRACT

Plasmin, microplasmin and plasminogen activators are used to treatment different thrombosis, disease characterized to formation of blood clots. This is a cause of death frequently associated with myocardial infarction, stroke, deep-vein thrombosis and pulmonary embolism.

Material & Methods: Microplasmin JG is a low-molecular-weight protein of two molecular chains of 29 and 35 KDa, obtained by plasminogen autolysis in alkaline medium, purified with affinity and anionic interchange chromatography. *In vitro* (fibrin and fibrin plate) and *in vivo* (carotid artery thrombosis in rabbits) assays were performed. Fibrinogen, platelets, thrombin time and hematocrit levels were measured before and after microplasmin infusion in rats.

Results: Lysis fibrin clot showed a decrease in the weight (g) respect control (sodium borate buffer) (0.50 ± 0.02 vs. 89.60 ± 3.19) in 25 min. Microplasmin JG showed 25 UI/L activity in fibrin plate. Hematologic parameters showed no decrease either preinfusion and after 48 h injection microplasmin JG treatment: fibrinogen (177 ± 2.18 vs. 170.5 ± 3.75 mg%), platelets 464.083 ± 19.994 vs 509.333 ± 17.812 mm^3) , thrombin time (42.41 ± 1.36 vs. 39.80 ± 0.89 seg.) and hematocrit (44 ± 0.56 vs. 46 ± 1.41 %). Doppler in carotid artery thrombosis showed 100% of reperfusion after 15 min.

Conclusion: Microplasmin JG is a two-chain protein obtained with novel autolysis in alkaline medium, with excellent fibrinolytic effect in thrombosis artery without risk of hemorrhagic events.

Corresponding authors: Agustín Joison, Córdoba Catholic University, Argentina, E-mail: ajoison2001@yahoo.com.ar

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