Abstract

Introduction. Arterial thrombosis belongs to the group of cardiovascular diseases which, according to data from the World Health Organization, are the main causes of premature death and disability in the world. In addition to the influence of genetic and behavioral risk factors, thrombosis is also associated with pregnancy, due to the major physiological changes that increase the likelihood of aggravation of the disease. This important clinical condition, which can occur in 1 to 2 cases per 1,000 pregnant women, has been the target of recent advances in anticoagulant therapy to reduce maternal morbidity and mortality. Dermatan sulfate (DS), heparin (UFH), and low molecular weight heparin (LMWH) are glycosaminoglycans (GAG) anticoagulants capable of acting in the inflammatory process and vascular remodeling. DS, which is still being studied by our research group, proved to be an important inhibitor of vascular stenosis after injury. However, the effects of DS treatment during pregnancy are still unclear. Therefore, this study sought to analyze and compare the effects of DS, UFH, and LMWH in the treatment of arterial injury-induced in C57BL6/J pregnant female mice. **Methodology**. The arterial injury was induced by ferric chloride in the animal's right carotid artery on the 7th day of gestation. The different groups of injured animals were treated for up to 48 hours after the injury, with 10mg/ml of DS, 1mg/ml of UFH, or 1mg/ml of LMWH. The injured artery, blood, and embryos were collected and analyzed 24 hours (8th day of pregnancy) and 72 hours (10th of pregnancy) after the injury. We analyzed the vessel occlusion time due to thrombus formation, the inflammatory process through the expression of P-selectin and I-CAM, the bleeding time (BT), activated partial thromboplastin time (APTT), prothrombin time (PT), and the number of embryos. This project was approved by the Ethics Committee on the Use of Animals (CEUA), protocol number: 4644-1. **Results**. All GAG were able to prolong vessel occlusion time right after arterial injury. We observed a significant decrease in thrombus formation in all treated groups only within 72 hours. There was a significant decrease in the expression of P-selectin in the groups analyzed at 24 hours, as well as in the expression of I-CAM in the groups analyzed at 72 hours. All GAG extended the BT within 24 hours and 72 hours. Only the group treated with UFH significantly decreased APTT within 24 hours. The PT showed

a significant decrease in the groups treated with UFH and LMWH, 24 hours after the injury. At 72 hours, APTT and PT did not differ between the groups analyzed. We did not observe, macroscopically, differences between treatments in the number of embryos generated. **Conclusion**. It is suggested that DS has similar activity to UFH and LMWH in that it can be considered as an adjuvant in the treatment of vascular injuries.