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## ADVANCED GLYCATION END PRODUCTS IN EXPERIMENTAL OVARIAN TORSION/DETORSION

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**Introduction:** It is well known that ovarian torsion is a medical emergency. The first action in the process of treatment is detorsion, but reperfusion can increase the initial injuries due to oxidative stress <sup>[1]</sup>. There is strong evidence obtained *in vitro* that indicates that oxidative stress accelerates AGEs (advanced glycation end products) formation. In their turn, these AGEs can generate reactive oxygen intermediates <sup>[2]</sup> that can stimulate oxidative processes <sup>[3]</sup>.

The purpose of our study was to determine advanced glycation end products levels variations in the blood serum samples of female rats that were subject to experimental ovarian torsion/detorsion and to appreciate the effect of controlled reperfusion on the levels of AGEs. Our research protocol was approved by The Ethics Committee of the "Nicolae Testemitanu" State University of Medicine and Pharmacy, Republic of Moldova.

**Materials and methods.** Seventy healthy rats (*Rattus albicans*), females, were randomized into seven groups (n=10): group 1: these rats were exposed to no intervention; group 2 (the sham group): the animals underwent laparotomy only; group 3: the rats underwent 3 hours ovarian torsion (ischemia); group 4: the animals underwent ovarian ischemia for 3 hours followed by 1 hour of simple reperfusion; group 5: the rats were exposed to 3 hours ovarian ischemia followed by 1 hour reperfusion, the controlled type (controlled detorsion was assured for two minutes by opening and closing the clips on the ovarian annexes in 10 seconds intervals, and after that followed by 1 hour of simple reperfusion); group 6: the animals were exposed to 3 hours ovarian ischemia and 24 hours simple reperfusion; group 7: the animals underwent 3 hours ovarian torsion and 24 hours controlled detorsion.

AGEs levels were determined in blood serum samples by SÉRO Luc, et al. method (2013)<sup>[4]</sup>.

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**Results.** Statistically significant high levels of AGEs were registered in simple reperfusion groups compared to 24 hours controlled reperfusion group. This result indicates that controlled reperfusion determines the reduction of the processes that increase the concentration of AGEs in blood serum samples of females rats subject to ovarian torsion/detorsion.

**The prospects for further research.** It was concluded that ovarian torsion/detorsion is source of reactive oxygen species, which modify glucose metabolism with an AGEs production. Controlled reperfusion may protect the organism from a high advanced glycation. Relationship between ischemia/reperfusion injuries and AGEs synthesis require further research.

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