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Ke Xuan Liu
Yun Sheng Li
Wen Qi Huang
Shu Qin Chen
Zhong Xin Wang
Jia Xin Liu

Reply to Oltean and Olausson

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Dear Sir: We thank Dr. Oltean and Olausson for their interest regarding our work [1]. We agree with Dr. Oltean and Olausson that the scoring system for intestinal ischemia–reperfusion initially proposed by Chiu [2] and later completed by Park et al. [3] is reliable and reproducible. However, in our opinion, the modified Chiu's score is also a good method by which to grade intestinal ischemia–reperfusion injury for the following reasons. In the studies performed by Hei et al. [4], Cao et al. [5] and Zhang et al. [6], the modified Chiu's score was used to grade intestinal ischemia–reperfusion injury. Their results showed that the modified Chiu's score could also clearly distinguish the extent of intestinal injury. That means that this scoring system has been accepted by other researchers. Secondly, we had consulted two senior pathologists before choosing scoring systems for our experiments, and both of them thought that the modified Chiu's score was the same as Chiu's score in nature, but modified Chiu's score provided more detail in grading the extent of intestinal injury. Moreover, we used Chiu's score to evaluate intestinal injury at the same time and got the same results as we did with the modified Chiu's score in terms of the relative severity of injury among groups. Taken together, modified Chiu's score is as effective as Chiu's score for grading intestinal ischemia–reperfusion injury. Finally, in order to further confirm the existence of intestinal injury, we also employed two additional variables, intestinal lactic acid level and wet-to-dry weight ratio, and the results were in line with findings obtained with the modified Chiu's score.

Dr. Oltean and Olausson questioned whether or not any real morphological differences were apparent, particularly after such a brief observation period (60 min of ischemia followed by 60 min of reperfusion). As we mentioned above, we obtained positive results evidenced not only by increased modified Chiu's score, but also by the increases in intestinal lactic acid level and wet-to-dry weight ratio. Second, previous studies by other groups [7, 8] also showed that 60 min ischemia followed by 60 min reperfusion in the same rat model as used in our study could cause severe intestinal injury, which was evidenced by significant morphological changes and mucosal cell apoptosis. Also, in our study, a preconditioning strategy of 10 min ischemia and 10 min reperfusion could significantly alleviate intestinal injury, which was in accordance with the previous report [9, 10].

In conclusion, we thank Dr. Oltean and Olausson for bringing forward some interesting and significant questions which will help us improve our future research work.

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K. X. Liu (✉) · Y. S. Li · W. Q. Huang · S. Q. Chen · Z. X. Wang · J. X. Liu
Department of Anesthesiology,
The First Affiliated Hospital,
Sun Yat-Sen University,
58 Zhongshan 2 Road,
Guangzhou 510080, Guangdong, China
e-mail: liukexuan807@yahoo.com.cn