1 h, 2 h, 4 h, 6 h, 24 h) were 176.81 ± 6.47 , 181.07 ± 7.58 , 190.15 ± 9.09 , 208.02 ± 16.04 , 197.96 ± 13.80 , 195.31 ± 8.65 , 190.35 ± 5.53 , compared with sham group were significantly different ($p < 0.05$).

- At different time points, the content of TNF- α (18.05 ± 2.49 , 20.95 ± 2.48 , 32.96 ± 2.85 , 40.53 ± 3.09 , 39.07 ± 2.41 , 19.15 ± 2.29 , 38.81 ± 2.56 pg/mg) and IL-6 (17.1 ± 2.7 , 20.8 ± 3.5 , 33.8 ± 3.9 , 39.0 ± 3.9 , 38.2 ± 4.5 , 19.1 ± 2.1 , 22.1 ± 3.5 pg/mg) in the myocardium were all obviously expressed, compared with control group had significant difference ($p < 0.05$).
- At different time points, the content of TNF- α (18.05 ± 2.49 , 20.95 ± 2.48 , 32.96 ± 2.85 , 40.53 ± 3.09 , 39.07 ± 2.41 , 19.15 ± 2.29 , 38.81 ± 2.56 pg/mg) and IL-6 (17.1 ± 2.7 , 20.8 ± 3.5 , 33.8 ± 3.9 , 39.0 ± 3.9 , 38.2 ± 4.5 , 19.1 ± 2.1 , 22.1 ± 3.5 pg/mg) in the serum had significant difference compared with control group ($p < 0.05$).
- Left ventricular myocardial infarction area of I/R ischaemia 45 min, 2 H reperfusion group was $33.24 \pm 3.78\%$, compared with PARP-3AB group ($20.02 \pm 2.12\%$) was higher ($p < 0.05$).

Conclusions

- The level of PARP1 of ischaemia-reperfusion myocardial and related cytokines IL-6, TNF- α were showed dynamic changes, reperfusion during 15 min to 2 H was gradually increasing, during 4 H to 6 H was gradually decline, at 24 H a slightly elevated.
- PARP1-3AB inhibited the activity of PARP1 and the expression of cytokines.
- It is important to apply PARP inhibitors in ischaemia-reperfusion early phase. PARP reduced infarct size.

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THE EFFECT OF PARP1 ON EXPRESSION OF IL-6, TNF- α AND INFARCTION AREA OF RATS DURING EARLY HEART ISCHAEMIA/REPERFUSION INJURY

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Objectives To investigate PARP1 impacts on the protein expression and changes in activity of rat hearts in ischaemia-reperfusion injury. Research the tumour necrosis factor- α (TNF- α), Interleukin-6 (IL-6) of rat heart ischaemic/reperfusion on the same period, and study these serum cytokines expression and infarction area after PARP1 was inhibited by its inhibitor 3-aminobenzamid (3-AB).

Methods The rats ($n=190$) were randomly divided into sham group, ischaemia/reperfusion, Immunohistochemistry was used to examine the PARP1 expression at 15 min, 30 min, 1 h, 2 h, 4 h, 6 h, 24 h. TNF- α , IL-6 levels of serum and myocardial tissue were detected by ELISA. PARP inhibitor 3-AB and the equal volume of saline were given to sham group and PARP1-3AB group at 30 min after thoracotomy and 1 h after administration of reperfusion respectively, then testing the infarction area.

Results

- The average optical density values on expression of PARP-1 of I/R reperfusion group at different time points (15 min, 30 min,