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**THE CONTROL STUDY OF THE THERAPEUTIC EFFECTS BETWEEN THE AMI WITH CS SHEEP WITH IMPELLA LP2.5 AND IABP**

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**Objective** To observe the therapeutic effect of Impella LP2.5 and IABP use in the animal models of acute myocardial infarction with cardiogenic shock.

**Methods** Twelve full grown goats were divided into two groups, Impella group and IABP group. Positioned the angioplasty balloon in the mid-LAD of the goats after anesthesia. The balloon was inflated and the LAD was occluded until the model of AMI with CS were successful built. Keep the MAP around 70 mm Hg by using vasoactive drugs. Removed the balloon after the Impella LP2.5 or IABP was using. Continuous circulatory support was given by Impella LP2.5 or IABP until the hemodynamic and physiological indicators recovering. Observed the physiological condition, hemodynamic and blood biochemical parameters changes. Measured MIS after the animals were dead.

**Results** (1) Compared with normal, MAP, CO, CI were significantly reduced ( $p < 0.05$ ,  $p < 0.01$ ), SPAP was significantly increased ( $p < 0.01$ ) after CS during AMI. Compared with the models of CS during AMI, MAP, CO, CI were significantly increased ( $p < 0.05$ ,  $p < 0.01$ ), SPAP was decreased significantly ( $p < 0.05$ ,  $p < 0.01$ ) after the Impella LP2.5 or IABP was used. PAWP was significantly changed in Impella group but not IABP group. (2) The SAPA, PAWP, CO, CI during cardiac assist device using had significant differences between two groups. (3) Compared with normal, CK-MB, TnT at 1h and 6h after the AMI with CS models were successful built were significantly increased ( $p < 0.01$ ). (4) MIS in Impella group and IABP group were  $20.71\% \pm 4.98\%$  and  $20.21\% \pm 3.48\%$ . There were no significant differences between two groups.

**Conclusion** Impella LP2.5 and IABP can provide effective circulation support for the early revascularisation, stable hemodynamic status, gain the precious time for myocardial function recovery. Impella LP2.5 was more useful for improving the early hemodynamic status.