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THE EFFECT OF ZEDOARY ESSENTIAL COMPONENTS ELUTING STENT ON NEOINTIMAL FORMATION IN A PORCINE RESTENOSIS MODEL

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Objective To investigate the effect of zedoary essential components eluting stent (ZES) on porcine restenosis model.

Methods ZES, sirolimus eluting stent (SES) and bare metal stent (BMS) were implanted in three different major epicardial vessel in 36 balloon-injured porcine model randomly. Coronary angiography, optical coherence tomography and histomorphologic analysis were performed after the procedure.

Results Compared to the arteries implanted with BMS, there were significantly larger lumen diameter and area, and reduced diameter and area stenosis rate in the arteries with ZES or SES either at 30 days or 90 days, as follows: (30 days BMS: 1.43 ± 0.31 mm and 1.92 ± 0.63 mm², 43.2 ± 14.03 % and 47.12 ± 15.18 %; ZES: 2.0 ± 0.41 mm and 2.94 ± 1.13 mm², 21.4 ± 22.3 % and 27.7 ± 23.95 %; SES: 1.93 ± 0.38 mm and 2.85 ± 0.88 mm², 24.5 ± 12.93 % and 26.8 ± 16.81 %, $p < 0.01$; (90 days BMS: 1.31 ± 0.24 mm and 1.71 ± 0.58 mm², 48.2 ± 13.11 % and 51.17 ± 17.14 %; ZES: 1.97 ± 0.36 mm and 2.71 ± 1.01 mm², 24.4 ± 20.3 % and 29.4 ± 21.03 %; SES: 1.91 ± 0.27 mm and 2.67 ± 0.61 mm², 25.3 ± 11.03 % and 27.1 ± 18.41 %, $p < 0.01$. By histomorphomeric analysis, moderate inflammatory responses cells were observed in some arteries with SES. Injury scores did not significantly differ among the three groups at 30 and 90 days. The endothelised score was 2.69 ± 0.42 at 30 days, and 2.83 ± 0.39 at 90 days, compared with ZES and BMS, $p < 0.05$. No incomplete endothelium and inflammatory cells were observed in ZES arm.

Conclusion ZES can reduce neointimal hyperplasia with good endothelia coverage in porcine balloon injured coronary model.