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**INTRAVASCULAR ULTRASOUND ASSESSMENT OF BORDERLINE CORONARY ARTERY DISEASE OF PATIENTS WITH CORONARY HEART DISEASE AND DIABETES**

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**Objectives** Characteristics of the technical evaluation of intracoronary ultrasound in diabetic patients with coronary heart disease intermediate coronary lesions, as well as a variety of critical lesions and serum hs-CRP in the coronary angiography, in order to improve the diagnosis and treatment of borderline coronary artery disease strategy to provide a scientific basis.

**Methods** Randomly selected from January 2011 to January 2012 because of suspected coronary artery disease admitted to the First Affiliated Hospital of Kunming Medical College of Cardiology, informed consent and implementation of coronary angiography ruled a single coronary artery with critical lesions in 44 patients,

with Taiwan and coronary ultrasound. (Male 29 cases, 15 were female, the oldest 85 years old, minimum 41-year-old, average  $64.20 \pm 10.27$  years), diabetes group, 17 patients (12 males and 5 females, age 78 years, minimum 41-year-old, average  $64.12 \pm 10.05$  years); non-diabetic group of 27 patients (17 males and 10 females, aged 85 years old, minimum age of 41 years, an average of  $64.26 \pm 10.64$  years). Crown made the results, IVUS, and comprehensive judgment of the clinical indicators are in line with coronary heart disease. All patients were fasting blood 5 ml pumping 24 h before coronary angiography, using a SIEMENS the BN II automatic biochemical analyser and ancillary reagents immune scattering turbidimetry measured serum of hs-CRP. Crown made surgery Volcano Therapeutics, Inc. of Invision-Gold intravascular ultrasound diagnostic apparatus observation and storage lesion coronary artery external elastic membrane area (EEMA), minimal lumen area (LA), plaque area (PA) and plaque burden (PB), to calculate the eccentricity index (EI), remodelling index (RI). Age, sex, hyperlipidaemia, history of hypertension, diabetes history, smoking history and other relevant factors, access to cases collect objects lesions in patients with the nature, extent and clinical manifestations of discretionary intervention treatment and/or conservative treatment after discharge from hospital records and follow-up end when the patient's clinical outcome. SPSS17.0 statistical software to analyse the observational data, the difference was statistically significant  $p < 0.05$  sentence.

## Results

1. In patients with coronary heart disease with or without diabetes and gender, age, smoking history has no correlation ( $p > 0.05$ ).
2. Diabetes group triglyceride levels than non-diabetic group ( $1.83 \pm 0.82$  mmol/l vs  $1.42 \pm 0.42$  mmol/l,  $p = 0.032$ ).
3. No significant difference between diabetic and non-diabetic patients with coronary artery disease, coronary artery disease location ( $p > 0.05$ ), but more of the three lesions of diabetes (47.06% vs 11.11%,  $p < 0.05$ ), rather than diabetes single vessel disease (59.26% vs 17.65% more,  $p < 0.05$ ).
4. The intermediate coronary lesions of the diabetic group of soft plaque detection rate in non-diabetic group (58.82% vs 14.81%,  $p = 0.002$ ), no difference in the fibrous plaque, calcified plaque and mixed plaque detection rate (11.76% vs 29.63%,  $p = 0.169$ ; 17.64% vs 33.33%,  $p = 0.255$ ; 11.76% vs 22.22%,  $p = 0.381$ ). Gender, age, hypertension, with or without smoking, blood lipids are normal and patch types had no correlation ( $p > 0.05$ ).
5. Plaque eccentricity index of the critical lesions of the diabetic group is slightly larger than non-diabetic group, but the difference was significant ( $0.21 \pm 0.06$  vs  $0.19 \pm 0.05$ ,  $p = 0.177$ ). Critical lesions of the diabetic group, minimal lumen area of less than non-diabetic group ( $3.66 \pm 0.81$  vs  $6.77 \pm 2.14$ ,  $p < 0.001$ ), plaque burden and plaque area in the diabetic group than non-diabetic group ( $73.11 \pm 3.57$  vs  $55.75 \pm 5.49$ ,  $p < 0.001$ ;  $9.76 \pm 1.87$  vs  $7.89 \pm 1.91$ ,  $p = 0.003$ ), and critical vascular lesions external elastic membrane area, the proximal distal reference Vascular the EEMA average, remodelling index was no significant difference between the two groups ( $13.53 \pm 2.39$  vs  $14.76 \pm 2.91$ ,  $p = 0.159$ ;  $14.94 \pm 2.65$  vs  $16.24 \pm 2.34$ ,  $p = 0.094$ ;  $1.06 \pm 0.33$  vs  $0.89 \pm 0.34$ ,  $p = 0.107$ ).
6. Diabetes group received PCI stent implantation is higher than non-diabetic group (82.35% and 44.44%,  $p = 0.013$ ).
7. Under the guidance of the IVUS, the success rate was 100%, 0% of hospital MACE event rates.
8. To complete the follow-up of 35 cases (85.37%) patients with symptoms of more than relieved. Diabetic group (17.65%) of the three cases of recurrent angina, one patient died of

reinfarction (5.88%); non-diabetic group two cases of recurrent angina pectoris (7.41%), death (0%).

9. Diabetes serum hs-CRP measured value slightly higher than the non-diabetic group ( $5.308 \pm 0.772$  and  $4.214 \pm 0.945$ ,  $p < 0.01$ ), and the IVUS detection of soft plaques in patients with serum hs-CRP measured value is significantly higher than other plaques types of patients ( $5.65 \pm 0.72$   $4.51 \pm 0.80$ ,  $3.99 \pm 0.62$ ,  $3.98 \pm 0.88$ ,  $p < 0.001$ ), the other patch types of the soft spot between serum hs-CRP measured value difference not statistically significant ( $4.51 \pm 0.80$  and  $3.99 \pm 0.62$ ;  $4.51 \pm 0.80$  and  $3.98 \pm 0.88$ ;  $3.99 \pm 0.62$  and  $3.98 \pm 0.88$ ,  $p > 0.05$ ).

## Conclusions

1. In diabetic patients with coronary artery disease, coronary critical lesions like eccentric soft plaque are mostly smaller minimum lumen area, lumen loss in the area of the high side, large plaque area, plaque burden and emphasis. required interventional treatment ratio is high, suggesting that coronary heart disease and diabetes, even if only critical lesions are more serious than non-diabetic patients.
2. Coronary angiography and IVUS both imaging diagnostic techniques joint use, not only can improve the diagnostic accuracy of critical coronary lesions, but also to guide treatment decisions on the critical lesions, reducing post-PCI MACE rate, suggesting that diabetes mellitus suspected coronary heart disease population to the implementation of coronary angiography, where appropriate, plus line IVUS examination is worth promoting.
3. Significantly increased in patients with serum hs-CRP level of critical coronary lesions in patients with diabetes mellitus and critical lesions of the soft plaque, suggesting that serum hs-CRP test might be a critical lesion severity and guide treatment of the judgment coronary one of the important basis of the decision-making. 4. known coronary heart disease risk factors, age, sex, with or without a history of smoking, whether the severity of hypertension and other critical coronary lesions seems to be no predictive value, and with or without diabetes and with or without fat The severity of hyperlipidaemia on the prediction of critical coronary lesions is of great significance, should be like as a necessary check of suspected coronary artery disease population.