NATURAL HISTORY OF MACROPHAGE INFILTRATION OF CORONARY LIPID-RICH PLAQUES DETECTED BY OPTICAL COHERENCE TOMOGRAPHY AT BASELINE, 6-MONTH AND 12-MONTH FOLLOW-UP

Poster Contributions
Poster Hall B1
Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: Coronary I
Abstract Category: 36. TCT@ACC-i2: IVUS and Intravascular Physiology
Presentation Number: 2100-272

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Background: The natural history of macrophage infiltration of non-culprit coronary lipid-rich plaque (LRP) with contemporary medical treatment is not well known. And the quantification of macrophage density in coronary atherosclerotic plaques by optical coherence tomography (OCT) is clear. This study aimed to investigate the evolution of macrophage using optical coherence tomography imaging at baseline, 6 months (6M) and 12 months (12M).

Methods: Seventy-one LRP with macrophage in 59 patients who underwent OCT at baseline, 6M and 12M follow-up were included in this study. They were divided into three groups depending on the types of macrophage described in Figure. The length and arc of macrophage in total plaques were also measured. Other indicators of OCT, such as fibrous cap thickness (FCT) arc of plaques were also calculated in this study.

Results: OCT showed a significant increase in FCT and declined of arc of plaques from baseline, to 6 and 12 months follow-up. The length of the macrophage were shorten and the arc of the macrophage were also declined during the 12 months follow-up. At baseline, the percentage of Type1 macrophage was about 62%, which decreased to 50% at 6M and 39% at 12M follow-up, and the percentage of Type2 macrophage was about 29% at baseline and increased to 32% at 6M and 42% at 12M follow-up.

Conclusion: With the fibrous cap became thicker and the lipid content became smaller, the macrophage was observed becoming less frequent by quantification measurement over a period of 12 months.

![Graph showing evolution of macrophage types over time]

Type1 (T1) Distinct signal-rich only macrophage (Superficial)
Type2 (T2) Signal-rich macrophage and confluent punctate regions
Type3 (T3) No typical signal-rich macrophage but confluent punctate regions