852-3 Role of Circulating Myeloperoxidase Positive Monocytes and Neutrophils In Occlusive Coronary Thrombi

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Background: Although the procoagulant potential of activated monocytes is well described, the association between inflammation and thrombus propagation has not been investigated.

Methods:Coronary arteries with acute luminal thrombi were studied in longitudinally-orientated microangiographic sections 2.5 cm in length. Morphometric analysis of thrombus thickness, degree of occlusion and length of the necrotic core were performed. Thrombi were characterized using antibodies directed against FM1 and CD14-positive antigens. Total (vaccinated and non-vaccinated) macrophages were identified by anti-CD68, neutrophils and CD14-expressed neutrophil macrophages by anti-myeloperoxidase (MPO), and neutrophils by anti-CD65.

Results: In 68% of thrombus platelet density was greater at the site of plaque disruption while fibrin comprised a larger percentage of the propagated thrombus. Coagulative factors were higher (8.3 ± 4.2 mm) than non-occlusive (5 ± 3.6 mm; p < 0.01). There was no difference in underlying diameter luminal narrowing (71 ± 11% vs. 71 ± 20%, respectively), or length of necrotic core (9.8 ± 5.1 vs. 9.3 ± 5.6, respectively). Within the clot, occlusive thrombi showed a greater mean density than non-occlusive thrombi of MPO-positive macrophages (11.6% ± 5.1% vs. 3.0 ± 2.0%, p < 0.01). CD68 was more closely related to fibrin plugs than CHF. Obesity, a strong stimulus to LVMH and source of proinflammatory cytokines, was independently associated with both fibrinogen and CRP.

Conclusion: Thus, inflammatory mediators within the thrombus and tissue factor derived from MPO cells may contribute to occlusive thrombi.