

Effect and Prognostic Impact of Statin on the Plasma Levels of Secretory Type II Phospholipase A₂ in Patients Undergoing Percutaneous Coronary

Intervention

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Aim: To investigate the effect of statin on the plasma levels of secretory type II phospholipase A₂ (sPLA₂) after percutaneous coronary intervention (PCI) and the association of their subsequent coronary events after PCI.

Background: Recent studies showed that lipid-lowering agent, like statin, could reduce the incidence of subsequent coronary events either after acute coronary syndrome or after PCI. We also recently demonstrated that PCI might cause immediate elevation of the pro-inflammatory marker, like circulating level of sPLA₂, following the mechanical disruption of coronary plaque and had significant prognostic impact.

Methods: Plasma levels of sPLA₂ and C-reactive protein (CRP) were measured receiving PCI procedure. Serial blood samples were taken in 300 consecutive CAD patients at the time before coronary angiography, immediately after PCI and 24-hours after PCI. Patients were further divided into two subgroups according to the treatment with statin or not.

Results: In both subgroups, the median levels of sPLA₂ increased immediately after PCI. CRP did not rise immediately after PCI, but elevated significantly at 24 hours after intervention. Patients without statin treatment (n=168) had higher sequential changes of sPLA₂ and CRP levels after PCI than those underwent statin treatment (n=132). This phenomenon was more significantly observed at 24-hours after PCI (statin group vs. without statin group, sPLA₂: 396 ± 21 vs. 472 ± 24 ng/dL, p=0.01), without difference between different statins. After 2-year follow up, patients pre-treated with statin had better outcome, especially among those with increased sPLA₂ (>450 ng/dL) after PCI, history of diabetes mellitus, myocardial infarction, multiple vessel disease and those received balloon alone without stent for their CAD treatment.

Conclusion: We concluded that pre-treatment with statin can lower the elevation of sPLA₂ and CRP levels following the PCI procedure with mechanical disruption of coronary plaque, and thus improve the outcome among high-risk populations.

降血脂藥物影響病患接受經皮冠狀動脈介入性治療術後血中「分泌型第二型磷脂酶」及「丙型反應蛋白」之濃度高低與兩年預後的相關性研究

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目的： 研究降血脂藥物 (Statin) 對接受經皮冠狀動脈介入性治療術病患，其血中分泌型第二型磷脂酶 (Secretory type phospholipase A₂) 濃度之影響，及其兩年追蹤的預後相關性。

背景： 近來的臨床研究發現：降血脂藥物可對急性冠心症，或接受經皮冠狀動脈介入性治療術的病患有正面的助益。在我們的導管室與實驗室裡也發現：病患冠狀動脈經介入性治療術之後，可以快速釋放出大量的發炎物質--分泌型第二型磷脂酶，而其濃度高低，與經皮冠狀動脈介入性治療術後，有臨床預後價值。而降血脂藥物與分泌型第二型磷脂酶之間，以及冠狀動脈疾病患者的預後相關性，目前並不清楚。

方法： 我們選取 300 位在本醫學中心接受冠狀動脈氣球擴張術或支架置放治療的病患，並測取血中分泌型第二型磷脂酶及丙型反應蛋白 (C-Reactive Protein) 在術前、術後 (0 小時、24 小時、48 小時) 的多次濃度做比較，並且分析不同降血脂藥物之間、病患冠狀動脈疾病的傳統危險因子多寡、血管狹窄嚴重程度... 等等因素，與兩年之內再發生冠心症或再狹窄的機會之間的相關性。

結果： 根據降血脂的用藥與否，病患群再被分為有治療組 (n=132) 及無治療組 (n=168)。兩組血中分泌型第二型磷脂酶在經皮冠狀動脈介入性治療術後均快速明顯上升；但丙型反應蛋白則在 24 小時後才有意義上升 (p<0.01)；而無治療組在上升程度上則明顯高於治療組，在 24 小時後更是明顯 (有降血脂治療組與沒有降血脂治療組，分泌型第二型磷脂酶 396 ± 21 與 472 ± 24 ng/dL, p=0.01)。同時，在兩年的追蹤過程中，有降血脂治療組有較佳的預後。這種效果在某些「高危險族群」特別明顯，包括：經皮冠狀動脈介入性治療術後血中分泌型第二型磷脂酶濃度高於 450 ng/dL、有糖尿病或心肌梗塞病史、屬於多血管狹窄或阻塞者、及只接受氣球擴張而未置放支架病患。

結論： 由上述研究結果，我們發現：對某些高危險性病患，在經皮冠狀動脈介入性治療術治療之前，如果給予降血脂藥物治療，似乎可以經由降低發炎反應，來保護血斑塊在「經皮冠狀動脈介入性治療術」時，因外力導致血管剝離而引起的傷害，進而改善預後。