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**2P-0480** **Natural polyamines, spermine and spermidine, decrease the mean fluorescent intensities of CD11a and CD18, and increase that of CD62L**

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**Objective:** Recently, we found that human peripheral blood mononuclear cells (PBMCs) cultured in the presence of spermine or spermidine decrease their capacity to adhere to human umbilical vein endothelial cells (HUVECs). Here, we further examine the effect of polyamines on the expression of membrane molecules, especially adhesion molecules, in human PBMCs.

**Methods:** PBMCs from human volunteers were cultured in RPMI-1640 medium supplemented with 10% human serum. The expression of membrane molecules of PBMCs cultured with or without polyamines (concentration up to 500  $\mu$ M) was examined by flow cytometry.

**Results:** The mean fluorescent intensities (MFI) of CD11a staining in PBMCs decreased after 72 hour culture with spermine or spermidine in a dose-dependent manner, whereas putrescine seemed not to have any effect. The decrease of CD11a by spermine and spermidine treatment was not observed after a 24 hour culture. However, a decrease in CD11a MFI became apparent and was similar to that observed in cells cultured with the polyamines for 72 hours, when these cells were cultured for additional 48 hours in polyamine-free culture medium. Spermine and spermidine treatment did not decrease or increase the percentage of cell populations expressing CD11a. The MFI for CD18 was also decreased, while that of CD62L was increased. The MFI of other membrane molecules (CD11b, CD11c, CD31, CD49d, and CD49e) was not changed.

**Conclusion:** Increased adhesion of leukocytes to endothelial cells through LFA-1 (CD11a and CD18)/ICAM-1 binding is considered to be one of the important processes in atherogenesis, and many of the risk factors for atherosclerosis have been shown to increase LFA-1 expression, whereas they decrease that of CD62L. Therefore, the results of the present study suggest that spermine and spermidine should counteract the effects of these risk factors, and may have anti-atherogenic actions.