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Breakthroughs and Views

Brief commentary

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Recently, Tibbles et al. [1] reported that thrombopoietin (TPO) was capable of inducing P-selectin expression independently of calcium movements or platelet aggregation. They also found that leukocyte–platelet aggregates occurred after TPO cell stimulation most probably mediated by P-selection expression. Although they stated that they described a novel role for TPO in platelet function and platelet–leukocyte interactions both activities have been previously described by several groups [2–6]. Most of the studies showed that although TPO was not able to induce platelet activation alone it synergized platelet responses, including P-selectin expression, triggered by different agonists. However, Wu et al. [6] observed that TPO alone slightly increased P-selectin membrane surface levels and more recently Mouthon et al. [2] showed that administration of TPO to irradiated mice increased the number of activated platelets, i.e., those expressing P-selectin on their membrane. Because P-selectin is an important mediator of platelet–leukocyte interactions we studied the effect of TPO on platelet-polymorphonuclear leukocytes and we demonstrated that in fact, TPO potentiated mixed aggregate formation induced by thrombin. In conclusion, the article of Tibbles et al. confirmed that the effect of TPO on mature cells involves not only platelet activation but also cellular interactions between platelets and leukocytes.

References

[1] H.E. Tibbles, C.S. Navara, M.A. Hupke, A.O. Vassilev, F.M. Uckun, Thrombopoietin induces P-selectin expression on platelets and subsequent platelet/leukocyte interactions, Biochem. Biophys. Res. Commun. 292 (2002) 987–991.

[2] M.A. Mouthon, M.H. Gaugler, M. Vandamme, P. Gourmelon, G. Wagemaker, A. Van der Meeren, Ticlopidine inhibits the prothrombotic effects of thrombopoietin and ameliorates survival after supralethal total body irradiation, Thromb. Haemost. 87 (2002) 323–328.

[3] M. Schattner, R.G. Pozner, A.B. Gorostizaga, M.A. Lazzari, Effect of thrombopoietin and granulocyte colony-stimulating factor on platelets and polymorphonuclear leukocytes, Thromb. Res. 99 (2000) 147–154.

[4] M. Eilers, H. Schulze, K. Welte, M. Ballmaier, Thrombopoietin acts synergistically on Ca(2+) mobilization in platelets caused by ADP or thrombin receptor agonist peptide, Biochem. Biophys. Res. Commun. 263 (1999) 230–238.

[5] C.S. Philipp, J. Remmler, D. Zucker-Franklin, The effects of Mpl-ligand, interleukin-6 and interleukin-11 on megakaryocyte and platelet α-granule proteins, Thromb. Haemost. 80 (1998) 968–975.

[6] T. Wun, T. Paglieroni, W.P. Hammond, K. Kaushansky, D.C. Foster, Thrombopoietin is synergistic with other hematopoietic growth factors and physiologic platelet agonists for platelet activation in vitro, Am. J. Hematol. 54 (1997) 225–232.

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