LETTER TO THE EDITOR

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On the clinical relevance of circulating endothelial cells and platelets in prostate cancer

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Sir,

In their interesting study Wong *et al* (2012) report a preclinical and clinical correlation between the number of CD45 − CD31 + cells in the peripheral blood and the growth of prostate cancer. Using flow cytometry and microscopy, they suggest that the large majority of CD45 − CD31 + cells are more likely immature platelets and not circulating endothelial cells (CECs). Considering the wide antigenic overlap between CECs and platelets, and the possible aggregation/adhesion of platelets with CECs, we and others feel that in multiparametric flow cytometry the use of a cell viability stain and of a DNA-specific staining are necessary to discriminate DNA-containing CECs from DNA-free, CEC-derived macroparticles and platelets (Bertolini *et al*, 2006; Mancuso and Bertolini, 2010; Mund *et al*, 2012).

When Ning *et al* (2010) used a nucleic acid stain to enumerate CECs in prostate cancer patients receiving Bevacizumab, Docetaxel, Thalidomide and Predinisone, they reported a strong inverse correlation between changes in apoptotic CECs and PSA levels, suggesting that the drug combination may effectively inhibit tumour angiogenesis. Along this line, Strijbos *et al* (2010) used a nuclear stain to enumerate CECs in prostate cancer patients receiving Docetaxel. They reported that CECs' kinetics during treatment, alone or in combination with other biomarkers, predicted survival in this cancer population.

Data from Wong *et al* (2012) suggest that immature platelets deserve further clinical investigation as possible biomarkers of disease status in metastatic prostate cancer. One of the unique features of multiparametric flow cytometry is the possibility to enumerate in the same test-tube several different populations of cells, such as DNA-containing CECs, DNA-free, CEC-derived macroparticles and platelets. Several previous clinical studies involving antiangiogenic therapeutics in cancer patients indicated that these different cell and platelet populations might serve as unique predictive and/or prognostic biomarkers. We, therefore, recommend investigating them all in parallel in one test-tube using multiparametric flow cytometry technique.

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