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Letter to the Editor

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Endothelial progenitor cells and erectile dysfunction: reply

Fadini *et al*. mention that antibodies used and staining performed in our study were not described. In order to condense the methods section, we referred to the publication of the EPCAD study (Circulating Endothelial Progenitor Cells and Cardiovascular Morbidity and Mortality in Patients with Coronary Artery Disease Study), in which the patients from our study were enrolled from. Flow cytometry and staining procedures are described in detail in this publication.[1] This study demonstrated a clear and significant association of EPC and cardiovascular outcome in patients with coronary artery disease. Moreover, we could demonstrate that EPC are an independent risk factor for erectile dysfunction. Thus, in our opinion, event counts used in both studies are adequate, especially regarding the high number of patients included.

We could demonstrate in our study that only $CD133^+$, but not $CD34^+$, cells correlate with erectile function. We discussed this finding in the paper, but explanations remain speculative. $CD133^+$ cells are precursors of $CD34^+$ cells with an increased potency for endothelial repair. This finding was clearly demonstrated by Friedrich *et al*.[2] *in vitro* as well as *in vivo* in a mouse model and in humans. Hence, those experiments can be translated to the *ex vivo* determination of circulating EPC, particularly with flow cytometry, which is, at this time, the only and most validated method for EPC measurement. In the cardiovascular high-risk patients of our study, $CD133^+$ cells might be upregulated because of the increased endothelial dysfunction. Hence, these increased $CD133^+$ cell counts might allow to detect associations of $CD133^+$ cells with target variables more reliably. In contrast, consumption of $CD34^+$ cells into vascular lesion areas in these patients might result in decreased cell counts without the opportunity to detect distinct differences in our study population.

Fadini *et al*. criticize that EPC, in our study, was not further differentiated. We agree with this suggestion, but when the study was performed, detailed information about differentiation in $CD133^+/CD34^+$ or $CD133^+/CD34^-$ cells were not yet available. Thus, we further agree with the conclusion of Fadini *et al*. that consensus on EPC definition and evaluation is needed.

References

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