

LETTER

# Assessment of monocytic HLA-DR expression in ICU patients: analytical issues for multicentric flow cytometry studies

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See related research article by Gogos et al., <http://ccforum.com/content/14/3/R96>

We read with interest the recent report by Gogos and colleagues [1]. While the rationale for their study is excellent, we would like to comment on technical issues that may have influenced the results.

As stated, a time limit of 8 hours between sample drawing and staining at a central laboratory was specified [1]. Unfortunately, information regarding transport conditions is missing (average time, temperature). This seems important since monocytic HLA-DR expression (mHLA-DR) increases artificially over time [2,3]. Consequently, recommendations suggest that sample staining for mHLA-DR should occur within 4 hours [2,3]. Although the authors aimed to address the effect of transportation, they inappropriately used samples presenting with already near-maximal mHLA-DR values (>90%) before storage. We therefore assume that mHLA-DR results may be falsely elevated due to prolonged transportation times. Furthermore, mHLA-DR modulation during sepsis takes days and consecutive measurements are required [4]. Assessment of one early sample (within the first 24 hours) is probably inappropriate to investigate the impact of infection on mHLA-DR. Similarly, apoptosis staining should not be performed after 8 hours and experts' recommendations highlight the need for dedicated protocols on fresh cells [5].

We are convinced that successful future trials in sepsis will rely on our capacity to accurately assess immune responses. In that sense, flow cytometry multicentric clinical studies are essential. Such trials should be performed in standardized environments in accordance with specific (pre)analytical requirements. Otherwise,

results might be misinterpreted and may impede promising new avenues in future care of septic patients.

#### Abbreviations

ICU, intensive care unit; mHLA-DR, monocytic human leukocyte antigen DR-1.

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#### Competing interests

The authors declare that they have no competing interests.

Published: 27 July 2010

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