Fas in human semen

ARTICLE INFO

Keywords
Fas
Fas-L
flow cytometry
leukocytes
sperm

Dear Editor,

We read with great interest the article by Razeghinia et al. (2022) on the expression of proapoptotic receptors Fas/Fas-L on sperm cells and levels of their soluble forms in seminal fluid from patients with varicocele. We want to congratulate the authors for this successful article and make some contributions.

The authors state that sperm apoptosis is a useful indicator of male infertility in the case of varicocele, while being unable to detect Fas and Fas-L on sperm cells. At the same time, they also claim that the presence of Fas is a debated issue. In our article (Perticarari et al., 2008) we demonstrated beyond any reasonable doubt that Fas is not present in human sperm and clarified that detections of Fas from other authors were due to interference with leukocytes in seminal samples. To prove this, we performed semen analysis through a multiparameter flow cytometry method that excluded leukocytes from the sperm population (Perticarari et al., 2007, 2008). In their paper the authors show cytograms of Fas and Fas-L expressions in the sperm population gated in the R1 region, based on Forward Scatter vs. Side Scatter (Razeghinia et al., 2022). The correct gate on sperm, on the other hand, should be made to exclude leukocytes, identified by specific markers such as CD45, or, even better, it should combine a vital dye to distinguish the live sperm population from dead sperm and other cellular debris (Ricci et al., 2009). Additionally, the authors measured the quantity of soluble Fas and Fas-L in the seminal liquid, finding significantly decreased levels in patients with varicocele, but are not offering any hypothesis on the inverse correlation between these measurements. They conclude that "a reduction in sperm count and motility does not seem to be due to Fas-related mechanisms, but rather to other mechanisms".

We believe that while studying the impact of apoptosis in the sperm quality of patients with varicocele, the authors should have elaborated the cause of soluble Fas and Fas-L presence in the seminal liquid, which may be due to the presence of other cells. They should also have applied methods of apoptosis functional evaluation, as described in our article (Perticarari et al., 2008).

In conclusion, in order to test other mechanisms on apoptosis pathways, we would advise the authors to implement a method to evaluate the impact of external stimuli, different from Fas, for example staurosporine and H2O2, or Betulinic Acid, that may be able to increase caspase activity leading to apoptosis.

References

Perticarari, S., Ricci, G., Granzotto, M., Boscolo, R., Pozzobon, C., Guarnieri, S., Sartore, A., Presani, G., 2007. A new multiparameter flow cytometric method for human semen analysis. Hum. Reprod. 22, 485–494. https://doi.org/10.1093/humrep/del415.

Perticarari, S., Ricci, G., Boscolo, R., De Santis, M., Pagnini, G., Martinelli, M., Presani, G., 2008. Fas receptor is not present on ejaculated human sperm. Hum. Reprod. 23, 1271–1279. https://doi.org/10.1093/humrep/den113.

Razeghinia, M.S., Sahebazzamani, M., Soleymani, S., Ketabchi, A.A., Moqaddasi-Amiri, M., Mohammadi, M.M., 2022. Expression of proapoptotic receptors Fas/Fas-L on sperm cells and levels of their soluble forms in seminal fluid from patients with varicocele. J. Reprod. Immunol. 149, 103443 https://doi.org/10.1016/j.jri.2021.103443.

Ricci, G., Perticarari, S., Boscolo, R., Simeone, R., Martinelli, M., Fischer-Tamaro, L., Guaschino, S., Presani, G., 2009. Leukocytospermia and sperm preparation – a flow cytometric study. Reprod. Biol. Endocrinol. 7, 128. https://doi.org/10.1186/1477-7827-7-128.

Giuseppe Ricci[a,b,*], Sandra Perticarari[a], Rita Boscolo[a], Gianni Presani[a]

[a] *Institute for Maternal and Child Health, IRCCS Burlo Garofolo, 34137 Trieste, Italy*

[b] *Department of Medicine, Surgery and Health Sciences, University of Trieste, 34127 Trieste, Italy*

[*] Correspondence to: Department of Obstetrics and Gynaecology, Institute for Maternal and Child Health IRCCS Burlo Garofolo and University of Trieste, Via dell'Istria 65/1, 34137 Trieste, Italy.
E-mail address: giuseppe.ricci@burlo.trieste.it (G. Ricci).

Accepted 5 September