

## Re: The Effect of Fasting on Erectile Function and Sexual Desire on Men in the of Month Ramadan

I read with great interest the present article by Talib et al. Such analyses are invaluable to the study the effects of long term fasting on sexual function outcomes in Muslim countries. However, 45 subjects may be inadequate to provide conclusive answers to questions raised by the authors. The authors have addressed an important issue. To date, no randomized prospective clinical trials (RCT) have been carried out comparing the two groups (fasted versus non-fasted) and so to draw final conclusion, we should wait for RCTs in this regard. As there is no long-term data comparing functional outcomes after fasting in the month of Ramadan, present study has attempted to provide some data about this topic in terms of EF, sexual desire, and sex hormones. Although the primary feasibility endpoint of this study was set as IIEF-5/IIEF-EF domain, the presentation of the results performed less clear. In the results section, only total IIEF-5 score has been mentioned. Moreover, only the changes in total IIEF-5 score were shown (before vs. after), but not for each IIEF-5 studied questions. The usual practice of presenting the results of EF is to provide the percentage changes in pre- and post-fasting IIEF-EF domain scores.<sup>(1-4)</sup> Unfortunately, this essential information was not reported in the article. The only information that we could obtain was the pre- and post-fasting total IIEF-5 score. Therefore, we would greatly appreciate if the authors could provide further clarification of the results (pre- and post-fasting score for each IIEF-5 questions). This would help readers to better assess the potential role of fasting on EF.

Of most importance is the follow-up period. The end of study is the end of the month of Ramadan (end of fasting), whereas the effects of fasting may appear or continue in the following next weeks after long term fasting. An evaluation of the subjects in IIEF-5 EF domain at 3-month post Ramadan would be valuable for readers, but these were not provided by the authors.

There are several important limitations of this study. The main limitation of this study is the lack of a control arm. In addition, the penile hemodynamics have not been assessed. The study sample size and as a result the study power is low. In addition, there are many confounding factors which can affect EF of a man, the most important are, age, comorbidities such as renal, hepatic and cardiac diseases, serum lipid profile, the quality of relationship with partner, monthly income, daily exercise, medication used, occupational status and etc. All of the confounding factors should put in multivariate analysis, and then the results should be reported after adjustments for these confounding factors. Another important limitation is lack of partner satisfaction evaluation. The Clinical Global Impression Scale adapted for sexual function (CGI-SF),<sup>(5)</sup> is a useful tool for measuring pre- and post- intervention sexual function in women.<sup>(6)</sup> The finding of decreased serum follicle stimulating hormone (FSH) is important. Serum FSH level has negative feedback with spermatogenesis. Whether this decreased serum FSH level is due to alteration in spermatogenesis or is due to impairment in section by hypophysis gland, is not clear. A paragraph explaining this issue in discussion section would be very informative. I think the importance of this finding is more than deteriorated EF. Moreover, we don't know periods of impaired EF and decreased serum FSH time lasted for how many time (days, weeks, months). This finding highlights the importance of including a control group. Collectively, these limitations and findings raise concern about the bias in study findings. Despite the limitations mentioned above, the current study sets the stage for further exploring of this important issue.

This study provides important insight into the long-term results in EF, spermatogenesis and serum sex hormones after long term fasting for the month of Ramadan. Finally, EF of a man or woman has important correlation with his/her quality of life. Most of men or women have no problem with their sexual dysfunction. It was better to assess the impact of decreased EF on study subjects' quality of life. Quality of life can be assessed by Short Form-36 Health Survey (SF-36). SF-36 is a standard diagnostic tool evaluating different aspects of the QOL related with health over the previous 4 weeks.<sup>(7)</sup> Changes in SF-36 may be more generalizable than the absolute reported changes of IIEF-5 total score. As the sole study in the literature to date, this report open new era for further studies addressing the long term effects of long term fasting on EF, sex hormone and spermatogenesis. This purpose mandates RCTs, or at least large scale studies with control group and long term follow up periods. In addition we need to know the underlying pathophysiology which has resulted in altered EF and sex hormone. Conditions in which there is endothelial dysfunction, imply that decreased production of nitric oxide (NO) by endothelial cells could be a common denominator. NO, produced by endothelial cells, is responsible for penile erection. Increase in the concentrations of inflammatory markers such as, interleukin-6 (IL-6), IL-1 $\beta$ , high-sensitive C-reactive protein (hsCRP), endothelial-prothrombotic markers/mediators, tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), von-Willebrand factor (vWF), plasminogen activator inhibitor-1 (PAI-1), tissue plasminogen factor (tPA), and fibrinogen have been reported in patients with erectile dysfunction.<sup>(8)</sup> further studies are needed to elucidate the potential role of long term fasting on EF, sex hormones and spermatogenesis.

Mohammad Reza Safarinejad, MD

Clinical Center for Urological Disease Diagnosis and Private Clinic Specializing in Urological and Andrological Genetics, Tehran, Iran.

E-mail: info@safarinejad.com

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