

# Letter to the Editor

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## Investigating actions of changing hormone levels

Sir,

I congratulate Drs Kol and Homburg for their recent paper (2008).

Other than timely hormone assays to investigate the pathophysiology of menstrual cycles and treatment modalities, there seem to be other equally important problems. One of them is the much ignored chronobiology and the consequent chronotherapy. As with many drugs, their effect may be different depending on the time of the day when they are administered. A good example for hormones is what one achieves when corticosteroids are given in the morning or in the evening in terms of adrenal function suppression. But not much is known, if anything, about sex steroid administration.

The other problem, of difficult investigation, is the gradient of circulating hormones e.g. at the ovarian level. The ovarian microcirculation is under the control of the autonomic nerve fibres it contains. In theory, one could expect that despite normal blood levels, a local vasoconstriction might prevent the target cells from responding to their respective ligand. Doppler studies of the ovarian circulation might help to elucidate this possibility.

I still remember that, prior to the advent of gonadotrophins for the treatment of anovulation, our colleagues used low-dose X-ray irradiation of the ovaries, with acceptable results. Why? Low-dose irradiation has a thermogenic vasodilating effect that might contribute to an improvement of ovarian circulation resulting in better hormone gradients at that level. Of course, nobody would dare nowadays to suggest any such treatment. But if one would suspect of an ovarian vasoconstriction, we wonder what would be the effect of local short-wave diathermy to induce vasodilatation?

For those who have the research facilities and the interest, these problems are fascinating and very important.

## Reference

Kol S, Homburg R. Change, change, change: hormonal actions depend on changes in blood levels. *Hum Reprod* 2008;23:1004–1006.

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