Journal of Nephrology & Therapeutics
ISSN: 2161-0959

Khalifa, J Nephrol Therapeut 2012, 2:5
DOI: 10.4172/2161-0959.1000e108

Editorial Open Access

The Biochemical Changes of Some Female Sex Hormones in End Stage Renal Diseases (ESRD)

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Too many people cannot afford good medical care; we need national health insurance.

End Stage Renal Disease (ESRD) is a life threatening condition with high mortality despite advances in supportive care. Several epidemiologic studies have demonstrated an association between gonadal abnormalities and ESRD.

Female sex hormones, such as Estrogen (E2) and progesterone, take part in a major role in many tissues and in various processes, including the effect of puberty, sexual behavior, bone homeostasis, reproductive functions and menstrual cycle. They are secreted mainly from ovary and small amounts from adrenal gland.

Women with ESRD may develop estrogen and progesterone deficiency, high level of Luteinizing Hormone (LH), Follicle Stimulating Hormone (FSH) and decreased metabolic clearance of Gonadotropin Releasing Hormone (GnRH), LH, FSH and prolactin. These abnormalities may be due to disturbances in the hypothalamic pituitary gonadal axis (HPG).

The normal function of the hypothalamic–pituitary axis is disturbed on prolonged exposure to this chronic stress. In all these conditions, the stress hormones, such as corticotropin-releasing hormone (CRH), adrenocorticotropin, cortisol, prolactin, oxytocin, vasopressin, epinephrine and nor epinephrine, are elevated. These hormones inhibit gonadotropin secretion developing hypothalamic anovulation.

The disturbances of ovarian function occur frequently in women with ESRD leading to amenorrhea and infertility.

The hormonal profile of uremic women includes decreased level of estrogen, progesterone as a result of disturbance of hypothalamo-pituitary gonadal axis.

Regarding renal function, the profile includes elevated level of urea, creatinine and uric acid in ESRD patients.

Furthermore, lipid profile includes decreased level of high density lipoprotein cholesterol (HDL-C), elevated level of total cholesterol, Triacylglycerol (TAG) and low density Lipoprotein Cholesterol (LDL-C) in ESRD patients.

Finally, health is more important than military spending. We should work politically to get top priority for national health insurance.

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Received June 27, 2012; **Accepted** June 27, 2012; **Published** June 29, 2012

Citation: Khalifa M (2012) The Biochemical Changes of Some Female Sex Hormones in End Stage Renal Diseases (ESRD). J Nephrol Therapeut 2:e108. doi:10.4172/2161-0959.1000e108