

Discussion

Our study shows that all patients with severe preeclampsia have upper normal creatinine level which may indicate that the patient start to have a defect in glomerular function; in that the serum creatinine level still does not exceed upper normal level, and this may explain why there is accumulation of serum uric acid and leptin which depend on glomerular filtration in spite of normal creatinine level.

This may be due to high sensitivity of leptin and uric acid to the early changes in glomerular function than serum creatinine⁽¹⁵⁾, so leptin can be used possibly as an indicator of severity of preeclampsia, which indicates that the patient started to have affected glomerular filtration by severe preeclampsia. This is in agreement with the study done by Laivuori *et al.*⁽¹⁷⁾, where they explain that as leptin is eliminated mainly through the kidney and preeclampsia can be accompanied at least by histological renal changes⁽¹⁸⁾. The correlation between serum leptin, serum creatinine and serum uric acid suggest an association, either direct or indirect, between elevated serum leptin and renal changes in preeclampsia. Finally it could be concluded that elevated serum leptin level can be used as a marker in the assessment of severe preeclampsia.

References

1. Ozkan S, Erel CT, Madazli R, et al. Serum leptin levels in hypertensive disorder of pregnancy. *Eur J Obstet Reprod Biol.* 2005; 120: 158-63.
2. Report of the National High Blood Pressure Education Program Working Group on high blood pressure in pregnancy. *Am J Obstet Gynecol.* 2000; 183: S1-S22.
3. Koonin LM, Mackay AP, Berg CJ, et al. Pregnancy-related mortality surveillance-united states, 1987-1990. *Morbidity and Mortality weekly report.* Center for Disease Control Surveillance Summary. 1997 Aug; 46(4): 17-36.
4. Berg CJ, Chang J, Challaghan WM, et al. Pregnancy-related mortality in the United States, 1991-1997. *Obstet Gynecol.* 2003; 101: 287-96.
5. Lewis G, Drife J, Botting B, et al. Why mothers die 2000-2002. In: Nelson JP, Pre-eclampsia and Eclampsia. London: RCQ press, 2004. p. 79.
6. Knight M. National Perinatal Epidemiology Unit, University of Oxford, UK Eclampsia in the United Kingdom, 2005. *BJOG.* 2007 Sept; 114(9): 1072-8.
7. Villar J, Betran AP, Gulmezoglu M. Epidemiological basis for the planing of maternal health services. WHO/RHR, 2001.
8. Khedun SM, Moolley J, Naicker T, et al. Drug managment of hypertension disorder of pregnancy. *Pharmacol Ther.* 1997; 74(2): 221-58.
9. Livingstone JC, Livingstone LW, Ramseg R, et al. Magnesium sulfate in women with mild preeclampsia: a randomized controlled trial. *Obstet Gynecol.* 2003 Feb; 101(2): 217-20.
10. NICE Guidelines CG6 Antenatal care-Routine care for the healthy pregnant women, London; October 2003.
11. Cherhab FF, Mounzih K, Lu R, et al. Early onset of reproductive function in normal female mice treated with leptin. *Science.* 1997; 275: 88-90.
12. Zhang Y, proenca R, Maffei M, et al. Positional cloning of the mouse obese gene and its human homologue. *Nature.* 1994; 372: 425-32.
13. Harvey J, Shanley LJ, O'Malley D, et al. Leptin: a potential cognitive enhancer? *Biochem Soc Trans.* 2005; 33: 1029-32.
14. Lyon CJ, Law RE, Hsuehw A. Mini review: adiopocity, inflammatory and atherogenesis. *Endocrinology.* 2003; 144: 2195-200.
15. Ouyang Y, Chen H, Chen H. Reduced plasma adiponectin and elevated leptin in preeclampsia. *Internat J Gynecol Obstet.* 2007; 98(2): 110-4.
16. Haque Z, Lakho GR, Nafeco M, et al. Serum leptin level correlation to high blood pressure in adult females. *J Coll physician Surgpak.* 2006; 16(7): 450-4.
17. Laivuoria H, Kaajia R, Koistinen H, et al. Leptin during and after preeclamptic or normal pregnancy: it's relation to serum insulin and insulin sensitivity. *Metabo J.* 2000; 49: 259-63.
18. Spargo B, Lichtig C, Luger A, et al. Renal lesion in preeclampsia: Examination by light-electron and immunofluorescence microscopy. In: Lindheimer M, katz A, Zuspan F (eds). *Hypertension in pregnancy.* New York: Wiley; 1976. p. 123-9.

Correspondence to Dr. Anwar N. Al-Bassam

E-mail: laith_alhadad@yahoo.com

Received 11th Mar. 2012: Accepted 31st Mar. 2013.