

CHAPTER 34

MEDICAL SCIENCES OBSTETRICS AND GYNAECOLOGY

Doctoral Theses

01. SHARMA (Sheetal)
Study of Maternal Nutrition in Hepatitis E During Pregnancy and its Role in Vertical Transmission
Supervisors : Dr. Ashok Kumar, Dr. Premashis Kar, Dr. Sarita Agarwal,
Dr. Siddhartha Ramji and Dr, Syed Akhtar Husain
Th 23036

*Abstract
(Not Verified)*

BACKGROUND & AIM: Hepatitis E virus (HEV) infection is vertically transmitted but the factors that transmit the disease to fetuses are still unclear. To evaluate the maternal nutritional status in viral hepatitis during pregnancy and correlate it with the severity of hepatitis E in pregnancy and HEV genotype and viral load in mother and fetus to establish the vertical transmission of the virus and its risk factors including nutritional parameters. METHODS: A total of 267 jaundice patients were enrolled for the study. HEV related pregnant cases included: 103 (46.60%) AVH and 41 (89.13%) FHF; Non-HEV related pregnant cases included: 110 (98.21%) AVH and 2 (1.78%) FHF, healthy controls (N=144). The mother, cord blood and newborn samples were taken for analysis. Nutritional factors were evaluated on basis of anthropometric parameters and biochemical factors. Serum prealbumin and folate were assayed by ELISA kit. Quantification of HEV viral load was carried out by Real Time PCR. Sequencing of HEV positive samples was performed by commercial services. RESULTS: Approximately 14.63% (6/41) acute liver failure (ALF) pregnant patients expired before delivery. Nutritional factors were significant predictors of bilirubin, viral load and prothrombin time in AVH and FHF pregnant patients ($p < 0.05$). Viral load was significantly higher in FHF pregnant women compared to AVH pregnant women. Vertical transmission was observed in 46.09% (59/128) of HEV-IgM positive mothers. Out of 59 HEV-IgM positive cord and newborn blood samples, 15/59 (25.43%) were positive for HEV-RNA and genotype 1 of HEV was detected in 15 isolates of cord and newborn blood sample. Viral load was found to be significant predictor for vertical transmission of HEV infection. CONCLUSION: Malnutrition might confer a higher predisposition for HEV infection during pregnancy. Viral load was associated with vertical transmission of HEV infection. The prediction score model was well verified in the validation cohort group.

Contents

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02. YOGESH KUMAR
Study of the Role of Ovarian Interleukins and their mRNA Expression in Successful Implantation in Patients Undergoing IVF& ET Program.
Co-Supervisor: Dr. Sudha Prasad and Dr. Syed Akhtar Husain
Th 23033

Abstract
(Not Verified)

Objectives: To find out associations of the levels of quantitative cytokines profile with implantation and implantation failure in clinical pregnancy. To study the mRNA expression of IL-1b, IL-6, IL-10 and IL-12 in the follicular fluid cells (granulosa cells) of the patients undergoing in-vitro Design: Prospective-observational study **Material and Methods:** A sample size of 165 women was calculated. Women consecutively underwent IVF/ICSI-ET cycles. Follicular fluid sample containing granulosa cells were collected. Quantitative estimation of IL-1Beta, IL-6, IL-10 and IL-12B levels was performed by ELISA-technique. Gene amplification for mRNA expression levels was performed by Real-Time qPCR. Interpretation of mRNA expression levels was achieved using fold-change equation $2^{(-\Delta\Delta Cq)}$. T-test, Chi-Squares test, Mann Whitney U-test and logistic regression were applied as appropriate. The statistical significant level was calculated at $P < 0.05$. **Results:** A total of 168 women were enrolled, among them, 75 women were found pregnant (successful implantation group) whereas 93 women were found non-pregnant (implantation failure group). The pregnant women were younger as compared to non-pregnant group and mean age difference was statistically significant. The median levels of IL-1 β , IL-6, IL-10 and IL-12B were significantly lower in pregnant group as compared to non-pregnant group. Among 168 women a total of 80 (48.48%) women had mRNA expression of IL-1 β , IL-6, IL-10 and IL-12B. Out of them 28 (35%) women were delivered successfully whereas 19 (23.75%) were aborted and 33 (41.25%) women were non-pregnant. Mean fold change of IL-1Beta, IL-10, IL-6 and IL-12B levels were sub-zero among delivered and aborted group as compared to non-pregnant group. **Conclusions:** Women age and Lowered quantitative levels of IL-1 beta, IL-6 and IL-10 & IL-12B were found significantly associated with conception. The patient reach to the term gestation when fold-change $2^{(-\Delta\Delta Cq)}$ levels of IL-1Beta, IL-6, IL-10 and IL-12B were sub-zero (down-regulatory) and found associated with successful implantation.

Contents

1. Introduction. 2. Review of literature. 3. Objectives. 4. Materials and methods. 5. Results. 6. Discussion. 7. Summary and conclusions. References appendices and list of publications.