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**Name:** Mona Mohamed Fathi Taher El-Lffat

**Faculty:** Medicine

**Dept.:** Clinical Pathology

**Degree:** PhD



**Title of Thesis:** Evaluation of Neuron Specific Enolase (NSE), Tissue Polypeptide Specific Antigen (TPS) and Scatter Factor (SF) as Diagnostic and Prognostic Markers of Cancer Prostate

**Abstract:**

**Background:** Many strategies have been proposed to enhance the ability of PSA in differentiation of Prostate Cancer from BPH. The present study aimed at evaluating the measurement of serum levels of NSE, TPS and SF/HGF in combination with PSA and f/T PSA in Prostate Cancer patients to assess their diagnostic and prognostic value  
**Methods:** The study was conducted on 72 patients complaining of obstructive symptoms as frequency and urgency. 26 diagnosed as BPH, 21 diagnosed as localized PCa and 25 diagnosed as metastatic PCa .The latter group was divided according to Gleason score into moderately differentiated (n=13) and poorly differentiated adenocarcinoma (n=12). All patients were subjected to TRUS, core needle biopsy and assay of serum tPSA, fPSA measured by chemiluminescent immunometric assay, NSE using electrochemiluminescence immunometric assay ,TPS (IRMA) and HGF (ELISA). Correlation with progression free survival was done for metastatic patients

**Results:** Median values of tPSA was significantly higher in metastatic PCa(group III) compared to localized PCa (groupII) and BPH patients(group I) (68, 7.0, 2.0 ng/ml respectively  $P<0.001$ ), f/T PSA was significantly lower in PCa patients (groupII, group III) compared to BPH patients (0.13,0.14,0.2 respectively , $P=0.004$ ) , TPS was significantly higher in metastatic PCa (140 U/L) compared to group I and group II(77,65 U/L, respectively  $P=0.004$ ) and HGF was significantly higher in metastatic PCa patients compared to group1 and group II (2270,2132,1789 pg/ml, respectively,



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p=0.047). On constructing (ROC) curve using tPSA, F/T, NSE, TPS and HGF, it yielded AUCs of 0.739, 0.707, 0.429, 0.634 and 0.635 respectively.

Simultaneous assay of PSA and HGF yielded a sensitivity of 96% in discriminating between BPH from malignant prostate compared to 91% for HGF and 93% for PSA alone. The metastatic PCa group showed a lower progression free survival associated with high NSE levels.

**Conclusions:** The f/tPSA is useful in discriminating between BPH and PCa and thus allowing early intervention and treatment. A cutoff value of 0.24 for f/tPSA is recommended as it detects 87% of cancer cases and at the same time avoids 39 % of unnecessary prostate biopsy. Moreover, combining PSA and HGF was more accurate in discriminating between BPH and malignant prostate. High NSE levels are of prognostic significance in patients with metastatic PCa treated with hormonal therapy

**Key words:**

Prostate Carcinoma, f/t PSA, NSE, TPS, SF/HGF.



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**Name:** Neveen Mahmoud Moustfa Shaarawy

**Faculty:** Medicine

**Dept.:** Clinical Pathology

**Degree:** MSc



**Title of Thesis:** Study of the Effect of Gender, Local Anesthesia and Antioxidant on Myocardial Performance of Rats After Burn Injury

**Abstract:**

Burn has effect on myocardium performance; the cytokine cause cardiac dysfunction due to their effect on protein synthesis and  $Ca^{2+}$  level in the heart. Estrogen has protective effect on the heart. Also lidocaine produce protective effect due to its anti-inflammatory action. Antioxidant found to have important role in the inhibition of cytokines secretion from the heart.

**Key words:**

Cytokines, Lidocaine, Antioxidant.



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**Name:** Gihan Hafiz Waly Ahmed

**Faculty:** Oral and Dental Medicine

**Dept.:** Biomaterials

**Degree:** PhD



**Title of Thesis:** Preparation of Biodegradable Scaffold for Dental and Medical Tissue Engineering

**Abstract :**

Tissue engineering is a biomedical field concerned with providing biological substitutes that could replace lost or malfunctioning tissues and organs. The idea of tissue engineering is based on isolating cells from an individual and expanding them in culture. The cells are then seeded on a biocompatible, porous and biodegradable carrier, called “scaffold”, where they start to proliferate and secrete their extracellular matrix. When the scaffold becomes adequately colonized by the cells, the scaffold-cell construct is implanted into the patient’s body where the scaffold gradually biodegrades until it becomes totally substituted by the newly formed tissue. Natural polymers were widely used as biocompatible scaffold materials because their chemical structure, in some respects, closely mimics that of the extracellular matrix of biological tissues. Even though a wide variety of biopolymers can be used for these applications, no single polymer has been yet found to fulfill all requirements needed in a scaffold material. In an attempt to combine the advantages of two natural polymers, a hybrid scaffold, containing two different polymers, was prepared and evaluated as a candidate for tissue engineering applications. The two combined polymers are chitosan and one cellulose derivative (hydroxyethyl cellulose) (HEC). Four groups of hybrid chitosan/HEC scaffolds were prepared with different HEC concentrations. The surface and bulk porosity of the scaffolds was examined using scanning electron microscope (SEM) and mercury intrusion porosimetry (MIP). The scaffolds were mechanically tested to evaluate their compressive strength. The biodegradation rate in lysozyme-containing saline was also measured over a six week period. The SEM photographs revealed that all hybrid scaffold groups exhibited an interconnected highly porous



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structure. The mercury intrusion porosimetry (MIP) results showed that all scaffolds had percent porosity in excess of 75% and that the percent porosity decreased by increasing the HEC concentration. The incremental intrusion versus diameter curves revealed that most of the scaffolds porosity occurred in the macro-scale. The compressive strength of the scaffold increased with the increase in the HEC concentration while the biodegradation rate decreased with increasing HEC content in the hybrid.

In order to evaluate the cytocompatibility of the chitosan-based scaffolds, mesenchymal stem cells were isolated from the bone marrow of ten donor rabbits. The cells were statically seeded on the scaffolds and their attachment to the scaffolds' surfaces was evaluated by phase contrast and scanning electron microscopes. The results revealed that after three days of seeding, the scaffolds became populated with cells that appeared either as isolated cells or in the form of small clusters. After eight days of seeding, the scaffolds were covered with larger clusters of cells and the cells abundantly colonized the scaffolds pores and were even observed dividing on the scaffolds' surfaces. The increase in cell density from the third to the eighth day serves as a clear indication that the investigated scaffolds not only promote cell attachment but also support cell proliferation. Thus, the investigated scaffolds can be considered as promising candidates for tissue engineering applications.

**Key words:**

Tissue Engineering, Scaffold, Chitosan, Cellulose, Cytocompatibility.



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**Name:** Mostafa Talaat El-Gangiehe

**Faculty:** Oral and Dental Medicine

**Dept.:** Department of Demonstrator in Oral and  
Maxillofacial Surgery



**Degree:** MSc

**Title of Thesis:** Evaluation of the Quality of the Formed Bone After  
Horizontal Alveolar Distraction

**Abstract :**

Purpose: This study aimed at evaluating horizontal alveolar distraction as one of the modalities for lateral ridge augmentation.

Patients and Methods: Six patients underwent ridge augmentation procedure using horizontal alveolar distraction utilizing a specially designed simple distractor. The technique involved creation of a labial transfer segment to which the distractor was fixed using titanium osteosynthesis microscrews. A piece of titanium mesh was fixed on the palatal bone opposing the distractor screw to act as a base plate. Distraction was performed at a rate of 0.5 mm/day followed by a consolidation period of 12 weeks. The formed bone was histologically and radio graphically evaluated and implants were inserted in the newly formed regenerate.

Results and Conclusions: bone was formed in the distraction gap which was well organized lamellar and woven bone. Therefore Horizontal alveolar distraction osteogenesis proved to be an available option for augmenting the width of the alveolar ridge.



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**Name:** Mohammad Abdallah El-sayed

**Faculty:** Pharmacy

**Dept.:** Analytical Chemistry

**Degree:** PhD



**Title of Thesis:** Contribution for The Analysis of Certain Drugs Which Treat Cerebrovascular Insufficiency

**Abstract:**

- **Part I:** General introduction.
- **Part II:** New spectrophotometric methods for the determination of binary mixtures of nicergoline and cinnarizine and stability indicating for vincamine. This part is subdivided into two sections:
  - Section (A):** Determination of vincamine in presence of its acid degradation product by the ratio subtraction method.
  - Section (B):** Determination of nicergoline and cinnarizine by the ratio subtraction and isosbestic point methods.
- **Part III:** Simultaneous determination of nicergoline and cinnarizine This part is subdivided into four sections:
  - Section (A):** Simultaneous determination of nicergoline and cinnarizine by the derivative spectrophotometry
  - Section (B):** Simultaneous determination of nicergoline and cinnarizine by densitometric methods
  - Section (C):** Simultaneous determination of nicergoline and cinnarizine by high-performance liquid chromatography



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**Section (D):** Simultaneous determination of nicergoline and cinnarizine by chemometric methods

▪ **Part IV:** Stability indicating methods for the determination of meclophenoxate hydrochloride. This part is subdivided into three sections: -

**Section (A):** High-performance liquid chromatographic determination of meclophenoxate hydrochloride in presence of its alkaline degradation product

**Section (B):** Kinetic study on degradation of meclophenoxate hydrochloride.

**Section (C):** Determination of meclophenoxate hydrochloride in presence of its acid degradation product using ion selective electrodes

▪ **Part V:** Stability indicating methods for determination of vinpocetine in presence of its degradation product This part is subdivided into four sections:-

**Section (A):** Determination of vinpocetine in presence of its acid degradation product by the derivative ratio spectrophotometry

**Section (B):** Densitometric determination of vinpocetine in presence of its acid degradation product

**Section (C):** High-performance liquid chromatographic determination of vinpocetine in presence of its acid degradation product

**Section (D):** Chemometric determination of vinpocetine in presence of its acid degradation product

▪ **Part VI:** Stability indicating methods for the determination of pyritinol dihydrochloride. This part is subdivided into three sections:

**Section (A):** Determination of pyritinol dihydrochloride in presence of its degradation product by the derivative ratio spectrophotometry.

**Section (B):** High-performance liquid chromatographic determination of pyritinol dihydrochloride in presence of its oxidative degradation product.

**Section (C):** Determination of pyritinol dihydrochloride in presence of its degradation product using ion selective electrodes.

**Key words:**

Derivative Spectrophotometry, High Performance Liquid Chromatography.



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**Name:** Shahira Mohammed Ezzat Mohammed El-Komy

**Faculty:** Pharmacy

**Dept.:** Pharmacognosy

**Degree:** PhD



**Title of Thesis:** Phytochemical and Biological Studies of Certain Species Belonging to the Genera *Dimorphotheca*, *Gazania* and *Helichrysum* (Family *Compositae*) Growing in Egypt.

**Abstract:**

We have been studying the work of three chemical plants, which we have to separate the vehicles for the first time many of these plants along with a composite *Helichryzone* new separate for the first time in nature. As measured biological effects of this plant has been affected on liver diseases.

**Key words:**

*Gazania*, *Dimorphotheca*, *Helichrysum*, *Composita*.



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**Name:** Hani Hunter Munir Bibawi

**Faculty:** Pharmacy

**Dept.:** Analytical Chemistry

**Degree:** MSc



**Title of Thesis:** Analysis of Pesticides

**Abstract :**

This thesis consists of five parts:

- **Part I:** General introduction.

This part involves general information about pesticides, their different classes and toxicity.

- **Part II:** Literature Review

This part contains some information about the studied pesticides, their chemical structures, properties and a review for different methods used for determination of the insecticide methomyl and the fungicides tetraconazole and diniconazole.

- **Part III:** Analysis of Methomyl

This part is divided into three sections:

Section (A): Densitometric determination of methomyl residues in tomato and cucumber fruits - kinetic study

This method depends on extraction of methomyl from tomato and cucumber fruits with methanol and separation of the insecticide from plant co-extractives using TLC technique depending on different R<sub>f</sub> values using mobile phase (benzene: methanol: glacial acetic acid 8: 2: 0.1 V/V/V) R<sub>f</sub> of methomyl = 0.6, R<sub>f</sub> of co-extractive = 0.06. Detection of spots was made at wavelength = 233 nm. The method determined methomyl in the concentration range of 1-7 µg/spot with mean percentage recovery of 99.91 ± 0.485.



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This method was used for quantitative determination of methomyl residues in tomato and cucumber fruits after separation on thin layer chromatographic plate followed by densitometric measurement of spots at the chosen wavelength. Quantification of methomyl residues was made by enrichment technique (addition of known amount of standard methomyl to the extract). A residue study was performed by spraying tomato and cucumber crops by a methomyl formulation (Lannate 90 % SP), collecting samples at different intervals and analyzing the samples for methomyl residues. The study showed decline (decrease) in methomyl residues with time. The decline rate was found to follow first order kinetics with  $t_{1/2} = 12.5$  hours.

Section (B): HPLC determination of methomyl in tomato and cucumber fruits

This method depends on extraction of methomyl from tomato and cucumber fruits by ethyl acetate, and cleans up of the extract by using adsorbing mixture of charcoal/ celite of ratio 2: 1 w/w. The determination of methomyl residues in the cleaned extract was made by HPLC using Zorbax ODS column, mobile phase methanol: water 1: 1 v/v, flow rate 1 ml/min, UV detection at  $\lambda = 233$  nm. The method determined methomyl in the concentration range of 1-20  $\mu\text{g.ml}^{-1}$  with mean percentage recovery of  $99.20 \pm 1.100$ .

A decline study was performed. The harvest date for tomato and cucumber fruits at black soil, different fields and different seasons were estimated.

Section (C): Colorimetric determination of methomyl (ferric hydroxamate method)

This section includes a colorimetric determination of methomyl (after its hydrolysis) using ferric hydroxamate method. A red color was obtained with the pesticide and it was measured at  $\lambda_{\text{max}} 530$  nm.

The method determined methomyl in the concentration range of 100-600  $\mu\text{g.ml}^{-1}$  with mean percentage recovery of  $99.73 \pm 0.791$ .

This method is used for determination of methomyl in its imported market samples.

▪ **Part IV:** Analysis of Tetraconazole and Diniconazole

Determination of tetraconazole and diniconazole fungicides residues in tomato fruits and green beans by capillary gas chromatography

This method depends on extraction of tetraconazole and diniconazole from tomato fruits and green beans with methanol, purification of the extract with liquid-liquid partition, then further clean up by column chromatography. The determination of tetraconazole and diniconazole residues in the cleaned extract was made by GC using phenylmethylsiloxane capillary column, operating conditions: Oven temperature



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240°C, inlet temperature 280°C and detector temperature 300°C. The carrier gas was nitrogen at a flow rate of 5 ml/min. injection volume was 1 µl, with splitless injection mode using Electron Capture Detector for detection.

The method determined tetraconazole and diniconazole in concentration ranges 0.001-0.2 µg.ml<sup>-1</sup>.

A decline study was performed for each fungicide for tomato fruits and green beans crops. An investigation on its kinetic order, t<sub>1/2</sub> and optimum harvest date was studied.

▪ **Part V:** General Discussion and Recommendations

This part contains comparison between the three different methods proposed for analysis of methomyl and suggested recommendations considering the safe use of studied pesticides in agriculture in Egypt.

The thesis contains 173 references, which are referred to throughout the period from 1972 – 2006. The thesis contains also 24 tables and 67 figures.

**Key words:**

Methomyl, Tetraconazole, Diniconazole.



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**Name:** Safaa Shawky Hassan

National Cancer Institute

**Dept.:** Clinical & Chemical Pathology

**Degree:** PhD



**Title of Thesis:** HBV Genotyping in Hepatocellular Carcinoma (Case - Control Study)

**Abstract:**

Hepatocellular carcinoma (HCC) is one of the most common malignant tumors world wide. HCC almost arises in the setting of chronic progressive liver disease, in particular, chronic infection by hepatitis B and C viruses. Genetic variability of the Hepatitis B virus (HBV) strongly impacts the natural history of infection and the efficiency of diagnosis, vaccination and treatment. Our study is a case control study aimed at evaluating the prevalent HBV genotype (s) among HCC cases (50) cases which are HBsAg positive and chronic HBV Egyptian patients (80) cases. The incidence of chronic HBV in HCC cases is about 10% in our study. Results revealed male predominance, mostly from rural areas. Liver cirrohsis was found in 60% of cases, 90% of our cases is HBeAg negative compared to 70% in controls. The prevelant HBV genotype for all cases and control is genotype D.

In conclusion, further study still needed on large scale of patients to trace any possible variation in the prevalent HBV genotypes among Egyptian patients by using different genotyping methods.

**Key words:**

Hepatitis B Virus, Hepatocellular Carcinoma, Genotyping.



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**Name:** Nabil Mahmoud Ismail Abdel-Al

**Faculty:** Physiotherapy

**Dept.:** Basic Science

**Degree:** PhD



**Title of Thesis:** Variability of Cervical Range of Motion Measurements  
in Normal Subjects

**Abstract :**

The study was conducted in the basic science department, faculty of physical therapy, Cairo University through December 2005 to March 2006. The purposes of this study was to examine the intra-examiner and inter-examiner reproducibility of range of motion measurements, to obtain norm-referencing values of active ROM of cervical spine of Egyptian population in different age groups measured by CROM instrument, and to study the effect of age and gender on cervical ROM values. Three hundred and thirty normal subjects participated in this study. Thirty normal subjects participated in testing the inter-rater and intra-rater reliability of measurements. The remaining three hundred normal subjects were assigned into five equal groups according their age as follow: Group I (17-20 years), Group II (21-30 years), Group III (31-40 years), Group IV (41-50 years) and Group V (51-60 years). Active cervical range of motion was measured by using CROM instrument for each of the six movements of cervical spine (flexion, extension, right lateral flexion, left lateral flexion, rotation to right and rotation to left). The study revealed that ICCs for intra-tester reliability ranged from 0.69 to 0.86 for tester one, from 0.69 to 0.98 for tester two and from 0.73 to 0.84 for tester three. While ICC for inter-tester reliability ranged from 0.61 to 0.89 for the first time and from 0.77 to 0.98 for the second time of measurement. Normal range of motion of cervical spine in healthy Egyptian population are different from those reported previously in other population, males have a greater cervical range of motion than females and normal cervical range of motion decrease with age. The level of significance for all tests was set as ( $P \leq 0.05$ ).

**Key words:**

AROM, Anthropometry, Ergonomics, Cervical Spine, Age, Gender, CROM.



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**Name:** Bassam Abd El-Majid Mohamed Refaat

**Faculty:** Physiotherapy

**Dept.:** Physiotherapy for Nervous System Disorders and  
Muscle Surgery

**Degree:** MSc

**Title of Thesis:** Kinematic and Electromyographic Analysis of  
Reaching Pattern in Stroke Patients



**Abstract:**

**Background:** A major prerequisite for successful rehabilitation therapy after stroke is the understanding of the mechanisms underlying motor deficits common to these patients. **Objectives:** Objectives of this study were to determine the influence of altered muscle activity amplitudes on active ROM and the level of motor impairment of reaching pattern. **Methods:** thirty stroke patients participated in the study. Their mean age was  $48.5 \pm 5.27$ . Analysis was conducted from sitting on a chair. The patients were instructed to reach for a target placed within their arm's length in forward horizontal plane by the affected then the non affected arm. Shoulder flexion, elbow extension and wrist extension ROM were analyzed by using three-dimensional motion analysis system. Muscular EMG amplitudes were recorded from the clavicular head of pectoralis major, anterior deltoid, lateral head of triceps and radial wrist extensors. The level of motor impairment was measured by the reaching performance scale.

**Results:** There was a significant decrease in EMG amplitudes of the selected muscles and in ROM of shoulder flexion, elbow and wrist extension in the affected arm than the non-affected which intern affect the motor performance of reaching pattern in the affected arm of stroke patients.

**Conclusion:** Reduction of EMG activity amplitudes of the selected muscles was considered as an important cause of limited ROM and increased level of motor impairment of reaching pattern in stroke population.

**Key words:** Stroke, EMG, 3-D Motion Analysis, Reaching Pattern.



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**Name:** Hewida Ahmed Hussein

**Faculty:** Nursing

**Dept.:** Child Nursing

**Degree:** PhD



**Title of Thesis:** The Impact of Health Education Program about Bone Marrow Transplantation on Improving Quality of Life of Thalassemic Children.

**Abstract:**

$\beta$ -thalassemia is the most common hemolytic anemia in Egypt and worldwide. Bone Marrow Transplantation (BMT) is the only available treatment for cure, but although the cure that was achieved by BMT is considered an aggressive form of therapy that creates significant physical, psychological and functional problems also causes increasing level of depression and anxiety which finally affects negatively on the child's quality of life (QOL). An appropriate understanding of children to their illness and BMT procedure and their role which can help in follow and comply with it only can help to enhance the child's QOL and success BMT procedure. Aim of the current study was to construct, implement and evaluate the impact of an health educational program about bone marrow transplantation on improving quality of life of thalassemic children who would undergone BMT. Aquasi experimental design was used and a convenient sample of 60 thalassemic children who would undergone BMT and met the criteria of inclusion were recruited in the study after being admitted to BMT unit. An educational program, pre-posttest, QOL scale and depression-anxiety scales were used. Results indicated significant differences and improvement among experimental group pre-posttest and between the experimental and the control groups regarding physical, psychological, functional, depression and anxiety status ( $p < 0.05$ ). Finding of this study emphasized the importance of availability of an health education program about BMT to thalassemic children undergo BMT procedure in managing their condition and care.

**Key words:**

$\beta$ -thalassemia, Thalassemic Child, BMT, QOL, Anxiety, Depression.



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**Name:** Abeer Mokhtar Abou Khatwa

**Faculty:** Nursing

**Dept.:** Maternal and Newborn Health Nursing

**Degree:** MSc



**Title of Thesis:** Product Stages of Pregnancy and Childbirth in Women Living Near Power Plants Inventions

**Abstract:**

The aim of this correlational study is to examine the effect of residing near power line stations generating electromagnetic field on pregnancy outcomes and course of labor. Three hundred women were recruited for this study. Then the sample was divided into two groups, both groups were constituted of 150 women. The prospective group was prospectively followed up during labor and delivery in the hospitals (El Kasr El Aini University Hospital & El Kanater El Khiria General Hospital), and the retrospective group was retrospectively followed up during pregnancy in M.C.H centers (Misr El Kadima MCH & El Kanater MCH). Furthermore, the two groups were subdivided into two groups according to their residence (polluted and non-polluted) 75 woman each. Data were collected through an interviewing questionnaire designed to collect data related to socio-demographic characteristics, family history and obstetric profile (used for both retrospective & prospective groups); a labor and delivery sheet designed to collect data regarding the history of the current pregnancy and delivery (used for prospective group); the modified WHO Partograph to collect data regarding the maternal condition during labor, the fetal condition during labor and the progress of labor (used for prospective group) and the neonatal assessment sheets to collect data regarding the neonatal condition after birth, neonatal anthropometric measurements, neonatal physical and neuromuscular maturity (used for prospective group). Findings of the study revealed that, women who live near the power line station (in the polluted area) had higher levels of electromagnetic fields at their houses (peak AC = 9.50 & peak DC = 3.00) as measured by using Guass meter, higher incidence of abortion ( $P < 0.001$ ), preterm delivery ( $P = 0.001$ ), still birth ( $P = 0.006$ ),



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neonatal congenital anomalies ( $P = 0.002$ ), neonatal low birth weight ( $P = 0.012$ ), and cesarean section delivery ( $P < 0.001$ ) in the previous deliveries than women who live away from the power line station (in the non-polluted area). At the same time, women who live in the polluted area had higher incidence of maternal anemia ( $P = 0.03$ ), neonatal congenital anomalies ( $P < 0.001$ ), neonatal death ( $P < 0.001$ ) and cesarean section delivery ( $P < 0.001$ ) in the present delivery than women who live in the non-polluted area. In conclusion, electromagnetic field had effect on maternal and neonatal outcomes in the polluted areas than the non-polluted areas.

**Key words:**

Power Line Station, Electromagnetic Field, Pregnancy, Fetus, Neonate.