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Preventive Gynecology Research Center (PGRC)



دانشگاه شهید بهشتی  
Shahid Beheshti  
University of Medical Sciences

## چکیده مقالات سخنرانی

پنجمین کنگره بین‌المللی  
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## Designing an artificial neural network model to determine the type and optimal initial dose of gonadotropin during the ovulation stimulation process

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### background research:

Choosing an appropriate and personalized starting dose of gonadotropin is an essential method to determine the quality and quantity of eggs in the process of controlled ovarian stimulation in the in vitro fertilization treatment cycle. The current approach to determine the type and starting dose of gonadotropin is mainly based on the experience of a doctor, which can be considered as lacking unified standards. The purpose of this study is to use a neural network model to identify the factors affecting eggs and finally to determine the type and optimal initial dose of gonadotropin in the process of controlled ovarian stimulation.

**Design:** A total of 408 patients were examined under controlled ovulation stimulation in an infertility center. After statistical analysis and finding important factors related to immature follicles and MII eggs, a neural network model was built based on important factors. Finally, clinical application and validation were conducted to verify the effectiveness of the proposed model.

**Results:** A comprehensive evaluation of effective factors showed that factors such as patient age, AMH, body mass index, the number of primary follicles, gonadotropin dosage play the main role in relation to the number of immature follicles and MII eggs.

The proposed neural network model performed well in terms of mean square error index. It was also clinically shown that this model, in addition to maintaining the desired number of MII eggs, has the ability to recommend gonadotropin with the optimal initial dose for each patient.

**Conclusion:** Modeling with a neural network approach is possible and effective. Also, this model can be used as an educational and auxiliary tool for new doctors and as a quality control tool for experienced doctors.

**Key words:** Artificial intelligence, Gonadotropin, IVF, Machine learning, Ovarian stimulation

## Comparing the Effect of platelet-rich plasma (PRP) and estrogen with estrogen alone on vulvo vaginal atrophy (VVA) and Stress urinary incontinence SUI

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**Background and Aim :** ABSTRACT Introduction: Urogenital aging disorders such as SUI and VVA are old but newly recognized problems, which can be highly prevented upon early recognition and treatment. Although some studies report positive effects of autologous and homologous PRP in the treatment of VVA and SUI, little is known about the effects of estrogen concentration of the prepared PRP. In this study, we aimed to determine the presence of estrogen in PRP and estrogen alone in VVA and SUI treatment.

**Methods :** Method: This semi experimental study was conducted on 100 married females who applied to urogenital clinic from August to September 2022 by convenience sampling method with the inclusion criteria. The samples were divided into estrogen alone (n=50) and PRP and estrogen (n=50) groups randomly. Vulvo vaginal atrophy symptoms scale and stress urinary incontinence scale were employed for data collection in this research. Data were analyzed using spss 22 software.

**Results :** Results: findings showed meaningful statistical difference in SUI mean score of two groups one months after intervention ( $p < 0/0002$ ). Also there was meaningful statistical difference in VVA mean score between two groups three months after the intervention ( $p < 0/001$ ). There was no meaningful statistical difference in VVA one months and SUI three months after intervention mean scores between two groups.

**Conclusion :** Conclusion: based on this research it can be concluded that combination of PRP and estrogen is more effective than Estrogen alone in treatment of VVA and SUI signs and symptoms and combination of PRP and estrogen can be recommended for SUI and VVA treatment.

**Keywords :** Key words: PRP, Estrogen, vulvo vaginal atrophy, stress urinary incontinence

## Outpatient cervical ripening with misoprostol to prevent post-term pregnancy: a double blind randomized clinical trial

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**Background and Aim :** Outpatient use of misoprostol is assessed in few studies and usually in low doses and vaginal route. This study was performed with aim to evaluate cervical ripening by outpatient administration of misoprostol to prevent post-term pregnancy.

**Methods :** This randomized clinical trial study was performed on 140 patients that were randomly allocated in two groups: 25 µg sublingual SL (group A) and 50 µg PO misoprostol (group B). The patients were primigravid with gestational age of 40 weeks, with amniotic fluid index (AFI) of  $\geq 5$  cm, a reactive non-stress test (NST) with no evident uterine contraction, Bishop Score of  $< 8$ , and no notable past medical history. Patients who had normal vaginal delivery before 41 weeks were considered as successful delivery. Maternal age, number of misoprostol doses, vaginal examination, type of interventions before delivery, indication of hospitalization, delivery route, indication of caesarean section, delivery complications, and neonatal outcomes were compared using SPSS software.  $P < 0.05$  was considered statistically significant.

**Results :** group A had mean age of  $23.27 \pm 4.03$  years and group B had mean age of  $24.61 \pm 5.46$  years with no significant difference ( $p=0.223$ ). The number of misoprostol doses ( $p=0.001$ ), extra misoprostol, and oxytocin application were significantly lower in group B ( $p=0.003$ ). Maternal and neonatal complications showed no significant difference between the two groups ( $p>0.05$ ).

**Conclusion :** Outpatient cervical ripening with misoprostol appears to be an optimal method. More prospective studies with higher sample size are required to ensure its safety for routine recommendation for cervical ripening to prevent post-term pregnancy.

**Keywords :** Outpatient, Cervical ripening, Misoprostol, Post-term pregnancy

## The effect of embryo transfer using abdominal and vaginal ultrasound methods on pregnancy outcome: a retrospective cohort study

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**Background and Aim :** Abdominal ultrasound (TAUS) and transvaginal ultrasound (TVUS) are used in IVF/ICSI methods to transfer the embryo into the uterine cavity. Since these methods have limitations, the present study was conducted with aim to compare them and their effect on pregnancy outcome

**Methods :** This retrospective cohort study was conducted in 2018-2022 on 522 intracytoplasmic sperm injection cycles in the Fertility Unit of Mahdiah Hospital in Tehran. After reviewing the files, the patients were divided into two groups of embryo transfer with transvaginal and abdominal ultrasound. After collecting demographic information, pregnancy outcomes including chemical pregnancy and clinical pregnancy, abortion under 10 weeks, ectopic pregnancy and the duration of embryo transfer were compared in the two groups. Data analysis was done using SPSS statistical software (version 26) and Mann-Whitney and Pearson Chi-square tests.  $P < 0.05$  was considered significant

**Results :** The frequency of chemical and clinical pregnancy and abortion was higher in the TAUS group, however, the incidence of EP was higher in the TVUS group ( $p > 0.05$ ). Also, the duration of embryo transfer using TAUS was longer compared to TVUS, but it was not statistically significant ( $p > 0.05$ ). The number of transferred embryos was equal in both groups, but the number of 5-day embryos was higher in the TAUS group, which was statistically significant ( $p < 0.05$ ).

**Conclusion :** There was no difference between abdominal ultrasound and transvaginal ultrasound in terms of pregnancy outcomes

**Keywords :** Embryo, Outcome, Pregnancy, Trans Abdominal Sonography, Trans Vaginal Sonography

## Correlation Between Discordance of Anti-Mullerian Hormone and Antral Follicle Count and Outcomes of Ovarian Stimulation Cycles

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**Background and Aim :** Anti-Müllerian hormone (AMH) and antral follicle count (AFC) are ovarian reserve tests before in vitro fertilization (IVF). Discordant AMH and AFC values can lead to differing assessments of ovarian reserve. This study evaluated whether AMH/AFC mismatches compared to concordance affect ovarian stimulation and IVF outcomes, to determine the preferable marker.

**Methods :** This retrospective cohort study included 300 women aged 20-40 years with infertility undergoing IVF/ICSI at Taleghani Hospital in Iran between October 2022 and November 2023. Patients were identified through medical records review of their AMH and AFC levels. Inclusion criteria were age 20-40 years and undergoing IVF/ICSI. Those with PCOS, POI, endometriosis or significant medical conditions were excluded. Patients were categorized into four groups based on AMH (<1.1 vs ≥1.1 ng/mL) and AFC (<7 vs ≥7): 1) Normal

AMH/AFC; 2) Low AMH/Normal AFC; 3) Normal AMH/Low AFC; 4) Low AMH/AFC. Data were analyzed SPSS version 25.

**Results :** No significant differences in age, BMI, or duration of infertility were observed between groups. The number of retrieved oocytes ,fertilization rate and the number of embryos significantly correlated with antral follicle count (AFC) across all groups ( $p < 0.001$ ). Specifically, the count of intermediate follicles (7-9 mm) demonstrated the strongest association with oocyte yield ( $r = 0.72$ ,  $p < 0.001$ ), while the number of small follicles (2-6 mm) showed a weaker and non-significant correlation ( $r = 0.25$ ,  $p = 0.21$ ). The quality of embryos did not exhibit a significant association with AMH or AFC groups ( $p > 0.05$ ). The ratio of retrieved oocytes to AFC follicles (Follicular Output Rate, FORT) also positively correlated with AFC ( $p < 0.001$ )

**Conclusion :** Discordance between AMH and AFC would be a challenge in IVF cycles. Oocyte yield aligned more closely with AFC and specifically intermediate follicle number versus AMH. Determining the more reliable ovarian reserve marker could optimize protocols

**Keywords :** Anti Mullerian hormone, Antral follicle count ,IntraCytoplasmic Sperm Injection, Discrepancy

## Comparison of three methods of stimulation in poor ovarian responder's women that undergo Assisted Reproductive Technology (ART), a randomized clinical trial.

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**Background and Aim :** In this study, we decided to compare gonadotropin, GnRH antagonist and mild ovulation stimulation and stop GnRH agonist with letrozole priming in poor ovarian responders in patients that undergoing Assisted Reproductive Technology (ART).

**Methods :** This is a double blinded randomized clinical trial that was performed in 2021-2022 on 150 women with poor response in IVF. Patients were then randomized into 3 groups, Gonadotropin, GnRH antagonist mild ovarian stimulation, and stop GnRH agonist with letrozole priming. Women were evaluated and compared regarding type of embryo transfer (fresh or freeze), primary outcome include: number of follicles, number of total and mature oocytes, cancelation rate, empty follicles, total number of embryos, quality of embryos and secondary outcome include: clinical pregnancy rate ,implantation rate and ongoing pregnancy rate.

**Results :** Patients in the stop GnRH agonist with letrozole priming had significantly higher duration of stimulation ( $P < 0.001$ ), total dose of gonadotropin ( $P < 0.001$ ), number of follicles with size of more than 14 mm ( $P < 0.001$ ), number of total and mature oocytes ( $P < 0.001$ ) and number of 2 pronucleus ( $P < 0.001$ ). The numbers of follicles, oocytes and mature oocytes were significantly lower in the mild stimulation group compared to stop GnRH agonist with letrozole priming group ( $P < 0.001$  for all). These values were almost similar to Gonadotropin, Gnrh antagonist group.

**Conclusion :** Patients treated with stop GnRH agonist with letrozole priming group had significantly better number of oocyte and embryo compared to other groups.

**Keywords :** infertility, ovulation, Gonadotropin-Releasing Hormone



## A Comparative Study of IVF Outcomes in Three Pre-treatment Methods (Dienogest, OCP, Decapeptyl) Following Frozen Embryo Transfer in Patients with Stage 3 and 4 Endometriosis

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**Background and Aim :** Endometriosis is a common cause of infertility in many women. Infertile women with endometriosis often require assisted reproductive technology to achieve pregnancy, and IVF can be improved with appropriate pre-treatments. This study aimed to investigate the effects of treatment with Dienogest, OCP, Decapeptyl, and the fresh embryo transfer method after oocyte retrieval in IVF candidates on pregnancy outcomes in women with endometriosis.

**Methods :** In the present clinical trial, 88 women with endometriosis in Isfahan during the years 2021-2023 were included. Three random groups of 22 individuals received three months of treatment with Dienogest, OCP, and Decapeptyl, and one group underwent fresh embryo transfer under IVF. Laboratory pregnancy, clinical pregnancy, endometrial thickness, and serum AMH levels were assessed after receiving pre-treatments.

**Results :** The prevalence of pregnancy in the Dienogest, Decapeptyl, fresh embryo transfer, and OCP groups was 36.4%, 18.2%, 4.5%, and 31.8%, respectively. Furthermore, clinical pregnancy ( $p=0.03$ ) and chemical pregnancy ( $p=0.03$ ) were significantly higher in the Dienogest and OCP groups.

**Conclusion :** Pre-treatments with Dienogest, Decapeptyl, and OCP improved the pregnancy rate with IVF compared to fresh embryo transfer; Dienogest and OCP performed better than Decapeptyl.

**Keywords :** Dienogest, OCP, Decapeptyl, Fresh Embryo Transfer, IVF, Endometriosis

## Severe early ovarian hyperstimulation syndrome following GnRH agonist trigger and freeze-all strategy in GnRH antagonist protocol; case report and literature review

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**Background and Aim :** Ovarian hyperstimulation syndrome (OHSS) is characterized by increased vascular permeability, hemoconcentration and fluid leakage to the third space. The vast majority of OHSS cases occur following ovarian stimulation for IVF. This potentially lethal iatrogenic condition is one of the most serious complications of assisted reproductive technologies.

**Methods :** We report one case of severe early OHSS after GnRH agonist trigger in a GnRH antagonist protocol and freeze-all approach without the administration of any hCG for luteal-phase support in a 34-year-old case of PCO with 7 years primary infertility. After oocyte retrieval the patient was seen at the emergency unit of the hospital with abdominal distension, pain, anuria, dyspnea, and OHSS symptoms. The diagnosis was OHSS with severe ascitis. She was admitted to the Intensive care unit (ICU).

**Results :** She was managed with oxygen by mask, intravenous fluids, anticoagulant and albumen, we performed a two-time vaginal ascites puncture, resulting in the removal of 7800mL of clear fluid in Intensive Care Unit with full recovery. This case study presents the clinical manifestations, investigation, progress, management, outcome and preventive measures. The patient was managed with no complications.

**Conclusion :** Clinicians have to be aware that even the sequential approach to ovarian stimulation with a freeze-all approach and GNRH analog triggering does not completely eliminate OHSS in all patients.

**Keywords :** GnRH agonist triggering; GnRH antagonist; freeze-all; ovarian hyperstimulation syndrome.

## An Investigation of the Effect of Myomectomy on Anti-Mullerian Hormone Level in Women with Uterine Leiomyoma

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**Background and Aim :** The findings on the effect of myomectomy on reducing anti-Müllerian hormone (AMH) are inconsistent. This study aimed to investigate the effect of myomectomy on the serum AMH level in women with uterine leiomyoma.

**Methods :** In this prospective study, 93 patients with uterine leiomyoma aged 18-45 years were enrolled and underwent open and laparoscopic myomectomy. The level of AMH was measured and recorded before and 6 months after surgery. The size, number, and type of myoma, the duration of surgery, the volume of bleeding during surgery, the need for blood transfusion, and postsurgical complications (fever, infection, and bleeding) were investigated at 6-month intervals after surgery.

**Results :** The mean age, BMI, and myoma size were 36.76 years, 26.56 kg/m<sup>2</sup>, and 6.74 cm, respectively. The results showed that the level of AMH decreased significantly after surgery compared to before surgery in both laparotomic and laparoscopic myomectomy patients ( $P < 0.001$ ). The rate of AMH drop was less in the laparoscopy group than in the laparotomy group ( $P < 0.001$ ). Among the studied variables, changes in AMH level showed a direct and significant correlation with myoma size and myoma type. The rates of complications after surgery were as follows: Fever rate was 12.3% in the laparotomy group and 6.1% in the laparoscopy group and pain was higher in the laparotomy group than in the laparoscopy group (21% vs. 7.3%). The surgical site infection rate was 0.9% in the laparoscopy group compared to 6.3% in the laparotomy group. The size of the myoma had no significant effect on the occurrence of these complications.

**Conclusion :** Myomectomy can lead to a significant decrease in AMH levels in patients with uterine leiomyoma undergoing open and laparoscopic myomectomy. In women with infertility and low AMH levels that are candidates for myomectomy, it can be recommended to freeze the embryo before operation.

**Keywords :** Uterine Leiomyoma, Myomectomy, Anti-mullerian Hormone

## Bioinformatics analysis of microarray data to identify hub genes, as diagnostic biomarker of HELLP syndrome: System biology approach

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**Background and Aim :** HELLP syndrome is one of the disorders characterized by hemolysis, increased liver enzymes and decreased platelet count. So far, many molecular pathways and genes have been identified in relation to the pathogenesis of this syndrome; however, the main cause of the incidence and progression of the disease has not been identified. Using the biological system approach is a way to target patients by identifying genes and molecular pathways.

**Methods :** In this study, the microarray dataset was downloaded from Gene Expression Omnibus (GEO) database and analyzed using the GEO2R online tool for identifying differentially expressed genes (DEGs). Enrichment analysis of DEGs was evaluated using the Enrichr database. Then, protein-protein interaction (PPI) networks were constructed via the STRING database; they were visualized by Cytoscape. Then the STRING database was used to construct PPI networks. The hub genes were recognized using the cytoHubba. Ultimately, the interaction of the miRNA-hub genes and drug-hub genes were also evaluated.

**Results :** After analysis, it was found that some genes with the highest degree of connectivity are involved in the pathogenesis of HELLP syndrome, which are known as the hub genes. These genes are as follows: KIT, JAK2, LEP, EP300, HIST1H4L, HIST1H4F, HIST1H4H, MMP9, THBS2, and ADAMTS3. Has-miR-34a-5p was also most associated with hub genes.

**Conclusion :** Finally, it can be said, that the identification of genes and molecular pathways in HELLP syndrome can be helpful in identifying the pathogenesis pathways of the disease, and designing therapeutic targets.

**Keywords :** HELLP syndrome, microarray data, System biology

## The effect of different types of sperm morphological abnormalities on ICSI outcomes in couples undergoing ART cycles

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**Background and Aim :** Infertility is one of the most important problems of couples in today's industrial world, which imposes a lot of costs on the health system of society and the economy of individuals. Clinical studies conducted in different parts of the world have shown that about half of infertility cases occur due to male factors. There have been many different methods to help people get pregnant, one of the most important of which is Intracytoplasmic Injection (ICSI). Various researches have investigated the dimensions and features of this method. When the normal sperm morphology is zero percent, there is an important challenge in sperm selection, and it is questionable which abnormality in sperm will have better outcomes. The aim of this thesis is to investigate the effect of different types of sperm morphological abnormalities on the outcome of ICSI (fertilization rate, quality of the resulting embryos and sperm DNA fragmentation rate, pregnancy rate).

**Methods :** A number of (99) couples with infertility problems, whose infertility was evaluated and confirmed according to who protocols, were randomly selected for infertility treatment with ICSI method, who met the inclusion criteria and exclusion criteria. After sampling, the morphological abnormalities of the sperm (head, neck and tail) of each person were evaluated and recorded in the file, and also the amount of DNA damage in each of the patients and its relationship with the existing abnormality was evaluated using the DFI kit. will be Also, 24 hours after the injection of sperm into the egg, Fertilization rate and three days later, the quality of the embryos obtained from the injection of sperm. 2 weeks after the transfer of the embryos into the uterus, chemical pregnancy is evaluated by measuring the level of b-hcg.

**Results :** Examination of sperm morphology showed that the normal morphology was 0 percent. Abnormality in the head of sperm 80.9% and in the neck 32.8% and in the tail of sperm 16%. In this study, the percentage of fertiliza-

tion rate was 36.6 percent. b-negative was seen in 24.5 percent and positive in 1.5 percent. In this study, 54.2% were frozen ..Determining the correlation between factors related to sperm physiology showed that there was a consistent relationship between motility, progression and number. And there was an inverse relationship between number and differentiation. And in no case was it related to fertility.

**Conclusion :** No significant relationship was found between sperm morphology and ICSI outcome parameters, such as fertilization rate and pregnancy rate, but there is a significant relationship between sperm head abnormalities and embryo quality. The reduction of sperm head abnormalitie

## Evaluation of Fertility Outcomes after Laparoscopic Salpingectomy for Tubal Ectopic Pregnancy

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**Background and Aim :** Ectopic pregnancy is the most common cause of death in pregnant women who are in their first trimester and definitive treatments have been identified recently. One of these treatments is laparoscopic salpingectomy, in which fallopian tube is entirely removed. Ectopic pregnancy can affect later pregnancies and focus of most treatments is reducing the future pregnancy complications. Aim of this study is to evaluate pregnancy outcomes in patients with a history of Ectopic pregnancy who received laparoscopic salpingectomy.

**Methods :** This is a retrospective observational study. Data from 164 ectopic pregnancy patients who were treated by laparoscopic salpingectomy in Shariati Hospital from 2016 to 2019 was gathered using hospital records, Phone calls and surveys. Pregnancy outcomes after laparoscopic salpingectomy were collected.

**Results :** out of 164 patients, 101 of them tried to get pregnant. Out of these 101 women, 36 (36%) used assisted reproductive technology, 13 (13%) were infertile, 83 (82%) had intrauterine pregnancy, 62 (61%) had Live birth, 20 (20%) had miscarriage, 5 (5%) had ectopic pregnancy recurrence and 1 (1%) had stillbirth. Also, having a history of infertility, live birth, second ectopic pregnancy and abortion did affect pregnancy rates.

**Conclusion :** Live birth rate (61%) was high compared to past studies. Therefore, laparoscopic salpingectomy is a suitable treatment. This study adds more data on the future pregnancy outcomes for patients treated with laparoscopic salpingectomy.

**Keywords :** Ectopic Pregnancy, Laparoscopic Salpingectomy, Pregnancy Outcome,

## The Evaluation of the Effects of Metformin plus Insulin Therapy versus Insulin Therapy Alone In Prevention of Pre-Eclampsia among Pregnant Females with Gestational Diabetes Mellitus

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**Background and Aim :** Gestational Diabetes Mellitus (GDM) is defined as glucose intolerance with onset or diagnosis for the first time during pregnancy. Mothers with GDM are associated with an increased risk of pregnancy complications. The aim of the present study was to evaluate the use of metformin along with insulin in pregnant women with GDM to prevent preeclampsia

**Methods :** This study was conducted as a randomized interventional clinical trial on 150 women with GDM referring to Al-Zahra, Shahid Beheshti and Amin medical centers in Isfahan from 2021 to 2023. Women treated with insulin were started using an intermediate-acting insulin such as NPH at a dose of 0.2 units/kg. In the group treated with metformin and insulin, in addition to insulin according to the above method, metformin was started with an initial dose of 500 mg twice a day. The results were analyzed using SPSS software Version 19

**Results :** There was a significant difference in the frequency of patients with protein excretion in studied groups according to preeclampsia ( $P=0.006$ ). So, the number of patients with protein excretion in the insulin group was significantly more than the insulin and metformin group. Also, the amount of insulin dose in the studied groups showed a significant difference according to preeclampsia ( $P=0.013$ ). So that, the dose of insulin used in the insulin with metformin group was significantly lower than insulin alone group. As well as, a significant difference was observed in the gestational age at the time of entering the study in patients with other pregnancy complications

**Conclusion :** A comprehensive view can be obtained in terms of the best way to control blood sugar, especially with the aim of preventing pregnancy and blood pressure complications. With more studies in this field, preeclampsia can be minimized in women with GDM, and as a result, maternal and fetal complications can be reduced

**Keywords :** Metformin; Insulin; Pre-Eclampsia; Pregnant Females; Gestational Diabetes Mellitus.



## Survival rates in endometrial cancer patients and prognostic factors affecting it

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**Background and Aim :** Endometrial cancer remains the most common gynecologic malignancy in Western Europe and the USA. Type I (endometrioid carcinoma) is associated with hyperoestrogenism and endometrial hyperplasia (80-90%) and Type II (non-endometrioid carcinoma) is an oestrogen-independent malignancy, usually developing from atrophic endometrial tissues (10-20%). we aimed to assess overall survival (OS) and disease free survival (DFS) of an endometrial cancer and to determine factors affecting the prognosis of patients with this cancer in a monocenter in Shiraz, Iran.

**Methods :** we reviewed medical records of all patients with definitively diagnosed uterine endometrial cancer (based on pathology results) referred to Motahari tumor clinic, Shiraz, Iran between 2014 and 2018 and were treated in a tumor clinic. Life Tables procedure were used examine the probability 1, 3, 5 years' distribution of DFS /OS times and Wilcoxon (Gehan) test was used for comparing survival distributions between categorical variables. The significance between curves by prognostic factors were estimated by the log-rank Test

**Results :** A total of 360 patients with endometrial cancer were included in this study that 39 (10.8%) were experienced relapse. The estimated probability 1, 3, 5 years DFS were 93%, 90%, 88 % respectively. The estimated probability 1, 3, 5 years OS were 92%, 89%, 89 % respectively.

**Conclusion :** In Conclusion of this study, the median 1, 3, and 5-year survival for DFS were 93%, 90%, 88 %, respectively and for OC were 92%, 89%, 89 %, respectively. FIGO Stages, Tumor Grade, Marital Status, Lymph Vascular Invasion,

deliveries, age group of patients have been identified as predictors of survival. The results of our work may contribute to better understand its clinical behavior. The results of the current study showed that the application of adjuvant brachytherapy in patients with high-intermediate and high-risk contributes to prolongation of DFS and OS.

**Keywords** : endometrial cancer, endometrial cancer survival , endometrial cancer prognosis

## Superior hypogastric plexus block as an effective treatment method for endometriosis-related chronic pelvic pain: an open-label pilot clinical trial

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**Background and Aim :** Safety and efficacy of SHP block in the treatment of CPP has been revealed in earlier investigations. However, the efficacy of SHP block for pain management in patients with refractory endometriosis has not been investigated in earlier investigations. We aimed to investigate the effect of superior hypogastric plexus (SHP) block on pain relief and quality of life of patients with refractory endometriosis pain.

**Methods :** Sixteen patients with refractory endometriosis underwent SHP block. The outcome measures included visual analogue scale (VAS) for chronic pelvic pain, VAS for dysmenorrhea, and VAS for dyspareunia. The short-form endometriosis health profile (EHP-5) was used to measure quality of life. All the outcome measures were evaluated at weeks 0, 1, 4, 12 and 24.

**Results :** The mean baseline VAS scores significantly improved after the SHP block ( $p < .001$  for all). The mean overall EHP-5 score also significantly improved from  $54.3 \pm 18.2$  to  $24.6 \pm 13.3$  ( $p < .001$ ). The positive effects of SHP were not diminished over time. No serious adverse effect was noticed in any of the patients.

**Conclusion :** the results of the present study reveal that the SHP block could be

used as an effective technique for the management of pain in refractory endometriosis positive effects led to the significant improvement of the quality of life of the affected patients.

**Keywords :** Endometriosis; pelvic pain; quality of life; refractory; superior hypogastric plexus block

## Spontaneous rupture of uterine during pregnancy after laparoscopic myomectomy; a case report

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**Background and Aim :** The possibility of future uterine rupture is a significant concern even though uterine leiomyomectomy or adenomyomectomy is a well approved operation to treat symptoms like dysmenorrhea or hypermenorrhea to improve fertility. In females of reproductive age, uterine leiomyomas (also known as myomas or fibroids) are the most prevalent type of pelvic tumor. Medical therapy, non-excisional techniques like uterine artery embolization (UAE), magnetic resonance guided focused ultrasound, and surgery (such myomectomy, radiofrequency ablation, hysterectomy...) are all available to individuals who desire treatment (1). The patient's preferences, surgical skill, and the characteristics of the myoma all play a role in the treatment decision. For patients with symptomatic intramural or sub serosal leiomyomas who want to have children in the future, laparoscopic myomectomy is typically preferred

**Methods :** A 37-year-old primigravid woman with gestational age of 34 weeks and 3 days referred to Shahid Beheshti hospital in Isfahan, Iran with an ultrasound examination that showed cystic center with maximum size of 60\*45 mm on the upper and right level of the fundus; The abovementioned cyst changes its size with the pressure of the probe and changing the position of the patient and in the examination with color doppler, liquid jet can be seen and therefore, the above case can be caused by myometrial diastasis and amnion herniation. Also, FGR was diagnosed in fetus ultrasound

**Results :** The Patients physical examination were normal and all the lab data were within normal ranges. Upon examination of the abdomen, old laparoscopy scars were observed on the skin. In our center, the patient underwent ultrasound again which confirmed the findings of previous ultrasound and confirmed the fetus FGR and rupture of the uterus. Finally, patient went through caesarian and a healthy and viable infant was born.

**Conclusion :** In light of the fact that dehiscence of the pregnant uterus can happen without showing signs of fetal distress, the authors' conclusion is that every pregnancy in women whose uteruses have already undergone surgery

should be closely monitored. An incidental case of uterine rupture following myomectomy, laparoscopic surgical procedures have several benefits. As there is a dearth of valid scientific data at this time, more research on this topic is required. However, since there appears to be a low risk of spontaneous uterine rupture during pregnancy, myomectomy should not be avoided in young women who intend to become pregnant.

**Keywords :** leiomyomectomy, adenomyomectomy, perinatology



## Assessment of the live birth rate after intrauterine insemination in women with low or very low levels of serum anti-Müllerian hormone

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**Background and Aim :** Although there is the ability to quantitatively assess ovarian reserve through the level of anti-Müllerian hormone (AMH), the reliability of its predictive value for successful live births after assisted reproductive technology (ART) procedures is still a topic of debate. The objective of this current study was to evaluate the significance of AMH regarding the occurrence of live births after intrauterine insemination (IUI) in individuals with low or extremely low ovarian reserve.

**Methods :** This retrospective cohort study included 123 patients with AMH levels  $\leq 1$  ng/ml who underwent a total of 137 IUI cycles. The objective was to assess live birth. The patients were divided into two groups based on their AMH levels: group 1 with a low level of AMH (0.4 to 1 ng/ml) (n=83, cycles: 95), and group 2 with a very low level of AMH ( $\leq 0.4$  ng/ml) (n=40, cycles: 42). The study compared the results between the two groups, with the main focus on pregnancy rates.

**Results :** Among all patients, the rates of biochemical and clinical pregnancy, and live birth were 11%, 8%, and 7.3%, respectively. There was no statistically

significant difference in the rates of biochemical (10.4% vs. 14.3%,  $p=0.3$ ) and clinical pregnancy (6.3% vs. 11.9%,  $p=0.2$ ), and live birth (6.3% vs. 9.8%,  $p=0.5$ ) between the groups with low and very low levels of AMH. Univariate regression analysis demonstrated that baseline and stimulation parameters did not have a significant association with outcomes.

**Conclusion :** The results suggest that in women with AMH levels equal to or less than 1 ng/ml, the serum levels of AMH may not be indicative of pregnancy outcomes and live births after undergoing IUI. Individuals with low or very low levels of AMH have the potential to achieve pregnancy and live births through the IUI procedure before performing intra-cytoplasmic sperm injection with or without ovum donation.

**Keywords :** anti-müllerian hormone, intrauterine insemination, live birth, assisted reproductive technology



## Validity and Reliability of the Persian Version of Uterine Fibroid Symptom and Health-related Quality of Life Questionnaire

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**Background and Aim :** Women with uterine fibroids (UFs) experience many clinical manifestations that affect their quality of life (QOL). The Uterine Fibroid Symptom and Health-related Quality of Life (UFS-QOL) questionnaire is an English instrument specifically designed to assess fibroid-related symptoms and their impact on QOL. This study aims to investigate the reliability and validity of the Persian version of the UFS-QOL questionnaire in Iranian women with UF.

**Methods :** In this descriptive study, Women with UFs who presented to Imam Hossein Hospital (Tehran, Iran) between August 2022 and January 2023 were enrolled in this study. A forward-backward approach was applied to translate the UFS-QOL questionnaire into Persian. The reliability of the UFS-QOL questionnaire was assessed by internal consistency and test-retest correlation. Confirmatory factor analysis (CFA) was used to assess convergent validity between items and subscales of the UFS-QOL questionnaire. Pearson's correlation coefficient was used to assess convergence validity between subscales of the UFS-QOL and the World Health Organization Quality of Life Brief Version 26 questionnaire (WHOQOL-BREF-26).

**Results :** Overall, we assessed 226 women with UFs. All subscales of the UFS-QOL questionnaire had acceptable internal consistency (Cronbach's alpha >0.7). Test-retest analysis indicated significant positive correlations between two measurements of all subscales of the UFS-QOL questionnaire: symptom severity ( $P<0.001$ ), concern ( $P<0.001$ ), activities ( $P<0.001$ ), energy/mood ( $P<0.001$ ), control ( $P<0.001$ ), self-consciousness ( $P=0.002$ ), and sexual function ( $P<0.001$ ). The Kaiser-Meyer-Olkin (KMO) measure value was 0.920, and the result of Bartlett's test of sphericity was significant ( $P<0.001$ ). CFA identified six factors for the health-related QOL (HRQL) questionnaire, which explained

73.827% of the total variation. Most subscales of the UFS-QOL questionnaire correlated with domains of the WHOQOL-BREF-26 questionnaire ( $P < 0.05$ ).

**Conclusion :** The Persian version of the UFS-QOL questionnaire is a valid and reliable instrument to evaluate UF-related symptoms and QOL among Iranian women.

**Keywords :** Leiomyoma, Quality of life, Psychometrics, Surveys and Questionnaires

## Cesarean Scar Pregnancy: A Rare and Challenging Clinical Entity

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**Background and Aim :** Cesarean scar pregnancy is a rare yet potentially life-threatening condition that occurs when a fertilized egg implants and develops within a previous cesarean section scar. This condition poses significant risks to both the mother and the developing fetus, making early detection and appropriate management essential. This paper aims to provide a comprehensive overview of cesarean scar pregnancy, including its epidemiology, etiology, clinical presentation, diagnostic methods, and treatment options.

**Methods :** Diagnostic Methods: Transvaginal ultrasound is the mainstay for diagnosing cesarean scar pregnancies. It allows visualization of the gestational sac embedded in the cesarean scar niche and provides crucial information regarding the location, gestational age, and proximity to vital structures. Other diagnostic modalities, such as magnetic resonance imaging (MRI) and color Doppler ultrasound, can provide additional insights into the extent of invasion and vascularity.

**Results :** Management Options: Management of cesarean scar pregnancy depends on factors such as gestational age, patient's desire to preserve fertility, and hemodynamic stability. Treatment options include systemic methotrexate administration, surgical excision, or a combination of both. It is crucial to balance the need for pregnancy termination with the preservation of future reproductive function. 6. Complications and Prognosis: Cesarean scar pregnancies carry a high risk of complications, such as uterine rupture, severe hemorrhage, and maternal morbidity. These complications, combined with the potential for poor fetal outcomes, emphasize the importance of appropriate management and comprehensive follow-up care.

**Conclusion :** 7. Conclusion: Cesarean scar pregnancy is a rare but potentially life-threatening condition that deserves immediate attention and proper management. Early diagnosis, individualized treatment strategies, and close follow-up are necessary to reduce maternal morbidity, preserve fertility, and achieve optimal pregnancy outcomes. Further research is warranted to enhance our understanding of this complex clinical entity and identify more effective management approaches.

**Keywords :** Cesarean scar pregnancy, niche pregnancy, transvaginal ultrasound, methotrexate, complications, management

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## Correlation of obstructive defecatory symptoms with pelvic organ prolapse and anorectal manometry

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**Background and Aim :** Defecatory dysfunction is a common problem among women who referred for urogynecological care. Pelvic organ prolapse (POP) which is a downward displacement of pelvic organs is one of the common condition among patients with defecatory problems . This study was planned to evaluate the correlation of obstructive defecatory symptoms with the site and severity of pelvic organ prolapse and the anorectal manometry results.

**Methods :** This cross-sectional study was performed between Dec 2018 and Nov 2019. About 150 women with symptoms of defecatory problems were enrolled. Patients were classified in two groups according to each compartment prolapse staging and severity; stage  $\leq 2$  and stage  $>2$ . The correlation between defecatory symptoms and pelvic organ prolapse examination, anorectal examination and anal manometry were evaluated.

**Results :** A total of 150 women were evaluated. There was a significant correlation between higher stage of anterior compartment prolapse (cystocele stage  $>2$ ) and constipation ( $P=0.035$ ). Although all the defecatory symptoms were more frequent in anterior prolapse stage  $>2$ , but the difference was not significant ( $P>0.05$ ). There was no significant correlation between defecatory symptoms and severity of posterior compartment prolapse. There was a significant correlation between stage  $>2$  of apical prolapse and all the defecatory symptoms ( $P\leq 0.05$ ). The abnormal anal resting and squeeze pressure and also abnormal balloon expulsion test were more frequent in stage  $>2$  of all compartment prolapse, but the difference was not significant ( $P>0.05$ ).

**Conclusion :** Obstructive defecatory symptoms were more frequent in patients with higher stage of anterior and apical prolapse. Abnormal manometry results were more frequent in patients with defecatory dysfunction with advanced vaginal prolapse.

**Keywords :** Pelvic organ prolapse, Defecation, Constipation, Cystocele, Rectocele, Perineum

## Evaluation of anal cytology and human papillomavirus infection in high-risk women: a cross-sectional study

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**BACKGROUND and Aim:** Anal cancer incidence has been on the rise over the past few decades. This study aimed to assess anal Papanicolaou (Pap) smear changes in women with high risk for dysplasia and human papillomavirus (HPV) infection.

**Methods:** This cross-sectional study was conducted in 121 patients referred to the Gynecology Oncology Clinic of Imam Hossein Medical Center between 2020 and 2021 in Tehran, Iran, who had cervical and vulvar dysplasia, cervical HPV infection, and abnormal cervical cytology results and were over 21 years old. Data analysis was performed using SPSS software version 21 (IBM Corp., USA) at a significance level of 0.05.

**Results:** 121 women, with a mean age of 39.69 years, were included in this study. Overall, 23.1% of women had positive anal HPV results, and 35.5% were over 40 years old. Younger age was associated with an increased risk of anal HPV ( $p = 0.045$ ). 33.9% of women were single and had a higher risk of anal HPV. Multiple sexual partnerships and anal sex were the significant risk factors for anal cancer ( $p < 0.001$ ). Women with positive anal HPV results had significantly more genital warts ( $p < 0.001$ ). No significant difference was observed in smoking, educational level, and cervical Pap smear results between women with negative and positive rectal HPV results.

**Conclusion:** Younger age at diagnosis, being single, multiple sexual partnerships, anal sex, and genital warts were associated with anal HPV infection in women. Abnormal anal cytology was only associated with being single and having multiple sexual partners.

**Keywords:** anal neoplasms, cytology, human papillomavirus, Papanicolaou test, uterine cervical neoplasms

## Comparison of chlamydia infection rates in women with miscarriage or infertility compared to the control group using Real Time PCR

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**Background and Aim :** Background: Chlamydia trachomatis is one of the most common sexually transmitted diseases around the world and there is wide-spread evidence of tubal obstruction following chlamydial infections. About 80% of women with this bacterial infection are asymptomatic, but ascending infections in the form of PID and subsequently infertility are common in women with chlamydia. Aim: The aim of the current study is screening based on the diagnosis of Chlamydia trachomatis infection using Real Time PCR considering its essential role in tubal infertility, chronic pelvic pain and abortion.

**Methods :** Using a vaginal swab, sampling was performed from 789 eligible women after completing a questionnaire and obtaining their consent. DNA was extracted from clinical sample manually and Real time PCR reaction was performed using chlamydia specific primers.

**Results :** In the current study, among 789 women who were examined in terms of the presence of chlamydia, Real time PCR results showed the chlamydia at 5% in normal group, 12.7% in the infertile group, and 12.9% in the abortion group. No significant relationship was found between patients' demographic information including history of infertility, premature birth, abortion, history of vaginitis and symptomatic vaginitis. However, in terms of chlamydia, there was a significant difference between abortion and infertile groups and control group and there was no significant difference between abortion and infertile groups.

**Conclusion :** Owing to high sensitivity of real time PCR to diagnose chlamydia trachomatis infection, this method can be used as an effective screening for routine diagnosis of this infection and infertility and abortion associated with this infection can be prevented with timely treatment.

**Keywords :** Chlamydia, PCR, infertility, abortion

## Using machine learning algorithms to predict the number of high-quality and low-quality embryos before the in vitro fertilization process

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In vitro fertilization, as a medical solution with a high cost in infertility, does not guarantee success in fertilization. One of the most effective factors in the success of each cycle is the quality of the embryos. Also, accurately predicting the number of high-quality and low-quality embryos is a difficult task for embryologists. Therefore, considering the prevalence of infertility, there is a need for a model for Predicting the number of embryos along with the quality of each becomes more important than before, so the purpose of this study is to use artificial intelligence to determine a model to predict the number of high quality and low quality embryos before the in vitro fertilization process.

**Design:** In this study, we trained different artificial intelligence algorithms with data collected from an infertility center. Then, using meta-heuristic algorithms, we took a step towards adjusting the optimal hyperparameters of each of the constructed models. Finally, we evaluated the effectiveness of each of the models on the test data by using indicators such as mean squared error and prediction rate.

**64 Results:** According to the volume of training data, the role of meta-heuristic algorithms was evident in the optimization of hyperparameters related to each of the machine learning models, which led to the improvement of the performance of each of these models. Finally, after evaluating each model with the help of evaluation indicators, models with deep learning architecture performed relatively better than classic machine learning models.

**Conclusion:** This study predicted the number of high-quality and low-quality embryos through clinically relevant parameters of each couple with acceptable accuracy. Therefore, artificial intelligence is thought to play a promising role in the infertility treatment process.

**Key words:** Artificial intelligence, High quality embryo, IVF, Machine learning

## The early versus standard administration of cabergoline to prevent ovarian hyperstimulation syndrome (OHSS) in patients with polycystic ovary syndrome (PCOS) undergoing ICSI cycles.

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**Background and Aim :** The effect of cabergoline on reducing the incidence rate of OHSS has been confirmed by several studies, currently what is discussed in this regard is when should cabergoline be started to be most effective in reducing the occurrence and developing rates of OHSS?

**Methods :** This randomized clinical trial was performed in the department of infertility treatment in Arash women's Hospital from June 2023 to August 2023. Among eligible infertile women with polycystic ovary syndrome who were at risk of developing OHSS in in-vitro fertilization/intracytoplasmic sperm injection (IVF/ICSI) treatment cycle, 200 were enrolled in this study. The subjects were randomly allocated into two groups, i.e. the experimental group (n = 100) receiving cabergoline beginning on the day of the starting administration of GnRH antagonist and then continued for 15 days after injection and the control group (n = 100) receiving cabergoline daily, starting from the day of oocyte trigger for 8 days after. Three days after ovum pick-up day, hematocrit (Hct) percentage, serum creatinine (Cr), sodium (Na) and potassium (K) levels, as well as abdominal circumference were measured in all patients. The patients were followed until menstruation occurred. The primary outcomes were the occurrence rates of OHSS and its severity.

**Results :** The data analysis showed that the two groups were comparable in terms of basic characteristics. In the following, the OHSS rate in the early administration group was significantly lower than control group (14% vs. 47%,  $P < 0.001$ ). In the study group, the severity of all OHSS cases was mild, while in the control group, moderate severity of OHSS was also reported ( $P < 0.001$ ).

**Conclusion :** Earlier initiation of cabergoline from the time of administration of the GnRH antagonist compared to its initiation from the day of oocyte triggering has more effectively reduced the rate and severity of OHSS and improved patient's satisfaction.

**Keywords :** Cabergoline, Polycystic ovary syndrome, ovarian hyperstimulation syndrome, Drug Administration Schedule.



## The value of miR-429 expression in predicting the prognosis of triple-negative breast cancer

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**Background and Aim :** In recent years, the role of changes in the expression of microRNAs and their targeted genes has been emphasized as a modulator for special signaling pathways related to the aggressive behavior of cancer cells. We aimed to evaluate the expression of miR-429 in triple-negative breast cancer (TNBC) and then to assess the role of this microRNA in predicting cancer prognosis (one-year overall survival).

**Methods :** Two hundred and thirty two patients with TNBC were included into the study. The expression level of miR-429 in cancerous and paired noncancerous tissues was assessed by reverse transcription polymerase chain reaction (RT-PCR) technique. The tumor size as well as its stage and grade were also pathologically determined. The patients were followed-up after admission time by phone with regard to one-year survival.

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**Results :** The expression of this miR-429 was significantly decreased in tumor tissues as compared to paired normal tissues ( $p < 0.001$ ). The over-expression of this microRNA was closely associated with smaller tumor size and its lower stages. The one-year survival rate of the TNBC patients whose tumors expressed low levels of miR-429 was 72.3%, which was significantly lower than that of the patients whose tumors expressed high levels of miR-429 (84.9%).

**Conclusion :** The over-expression of miR-429 is associated with a decrease in the aggressive behavior of the TNBC as well as an increase in the survival of patients.

**Keywords :** triple-negative breast cancer, microRNA, miR-429, survival

## Investigating the effect of injectable temperature-sensitive hydrogel containing micelles loaded with clotrimazole and silver nanoparticles: towards an effective treatment of vaginal candidiasis

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**Background and Aim :** Vaginal candidiasis is a common female mucosal infection caused by *Candida Albicans*. Clotrimazole is effective, but its therapeutic potential is limited by low dissolvability and bioavailability. Polymeric micelles (PMs) can improve clotrimazoles solubility and bioavailability and silver nanoparticles can enhance antifungal properties, potentially increasing its therapeutic effect. Loading PM in temperature-sensitive hydrogels provides a sustained drug release in body while offering ease of use and prolonged drug remain time, thus it is a favorable method for vaginal drug delivery.

**Methods :** The study characterized PCL-PEG-PCL (LGL) and PEG-PCL-PEG (GLG) copolymers using FTIR, HNMR, and GPC. It also determined the zeta potential and size of synthesized PMs by EMSA and DLS techniques and their morphology by FESEM and TEM. DLS and LDE techniques characterized silver-bearing PMs (PMAGs). Silver nanoparticles binding to PMs were confirmed by EDX and UV-VIS spectroscopy. We used a temperature-sensitive GLG hydrogel as a carrier.

**Results :** The micelle's drug loading content and encapsulation efficiency were calculated to be 14.6% and 64.53%, respectively. After being exposed to silver, the diameter and zeta potential of PMs increased to  $197 \pm 2.29 \text{ nm} \pm \text{SD}$  and  $-5.38 \pm 0.45 \text{ mV} \pm \text{SD}$ , respectively. Prior measurements were  $166 \pm 1.73 \text{ nm} \pm \text{SD}$  and  $-6.26 \pm 0.3 \text{ mV} \pm \text{SD}$ . The MTT assay was used to examine the biocompatibility of the samples, and the findings showed that the relative cell viability percentage exceeded 80% at concentrations of  $125 \mu\text{g}/\text{mL}$ . Moreover, samples have shown an ideal antifungal activity against *C. Albicans*.



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پنجمین کنگره بین المللی چالش های بالینی در مامایی، زنان و نازایی

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تهران، مرکز همایش های بین المللی دانشگاه شهید بهشتی، تالار ابوریحان

**Conclusion :** A core/shell polymeric micelle containing silver nanoparticles and clotrimazole was created for this study, and it demonstrated strong antifungal activity against *Candida albicans*. The combination was found to be cytocompatible with HEK293T cells. These findings imply that treating vaginal candidiasis may benefit from the use of a thermosensitive hydrogel system packed with silver-bearing polymeric micelles possessing advantageous characteristics.

**Keywords :** temperature-sensitive hydrogel, polymeric micelle, silver nanoparticle, vaginal drug delivery, antifungal drugs

## Induction of labor in pregnant women with premature rupture of membrane

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**Background and Aim :** Induction to labor interval is a very important issue in premature rupture of membranes (PROM) and can reduce maternal and neonatal complications. For induction of labor and termination of term pregnancies, various efficacy rates have been reported for different forms of misoprostol administration, but few studies have delved into this issue in patients with PROM. The aim of this study was to compare the efficacy of oral, sublingual and buccal misoprostol in induction of term pregnancies with PROM.

**Methods :** In this randomized clinical trial, 120 pregnant mothers with confirmed PROM at 37-42 weeks of gestation were randomly assigned to one of three groups of A (50 µg oral misoprostol), B (25 µg sublingual misoprostol), or C (25 µg buccal misoprostol). Main outcomes including induction to delivery interval, the duration of latent, active, and second stage of labour, and Apgar score at the first and fifth minutes were also recorded. Data were analyzed in SPSS v.24 considering a significance level of 0.05.

**Results :** Induction to delivery interval and the duration of latent, active, and second stage of labour were significantly shorter in the buccal group compared to the other groups ( $P < 0.05$ ).

**Conclusion :** Buccal misoprostol had the greatest effect in reducing the time of labour phases compared to both sublingual and oral conditions and thus is recommended for induction of labour in term pregnancies with PROM.

**Keywords :** Oral misoprostol, Sublingual misoprostol, Buccal misoprostol, Labor induction, Premature rupture of membrane