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Research Article

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## [Linagliptin Efficacy on Hyperglycemia, Oxidative Stress, and Inflammation in Gestational Diabetes Mellitus](#)

Background: Linagliptin is an anti-diabetic drug that claims no adverse effects and treatment of gestational diabetes mellitus (GDM) demands a safe anti-diabetic medication. Therefore, this study investigates the anti-diabetic efficacy of linagliptin in an induced GDM.

Materials and methods: Thirty-two matured female rats (100 - 200 g) were utilized. Sixteen non-pregnant/diabetic animals were fed with a normal diet and sixteen rats were fed with a high-fat (HFD), mated at the estrous stage in 2:1, and pregnancy was confirmed with a spermatozoa in a vaginal smear. The pregnant rats were intraperitoneally injected with a single dose (30 mg/kgb. wt)

of streptozotocin (STZ) to induce GDM. The animals were grouped into 4 groups, 8 rats/groups. Group I: control; Group II: control + 10 mg/kgb.wt linagliptin; Group III: GDM; Group IV: GDM + 10 mg/kgb.wt linagliptin. The animals were sacrificed after 14 days of treatment. Blood samples were collected for biochemical parameters.

Results: Fasting blood glucose (FBG) insulin, glycated hemoglobin (HbA1c), total cholesterol (TC), triglyceride (TG), low-density lipoprotein-cholesterol (LDL-C), malondialdehyde (MDA), interleukin-6 (IL-6), interleukin-1? (IL-1?), and tumor necrosis factor-alpha (TNF-?) levels significant ( $p < 0.05$ ) elevated in GDM rats, with significant reduction in high-density lipoprotein-cholesterol (HDL-C), catalase (CAT), superoxide dismutase (SOD) and reduced glutathione (GSH). Linagliptin administration significantly ( $p < 0.05$ ) decreased the FBG, insulin, HbA1c, TC, TG, LDL-C, MDA, IL-6, IL-1?, and TNF-? and ameliorates the HDL-C, CAT, SOD, and GSH levels significantly.

Conclusion: Linagliptin remarkably showed anti-hyperglycemic, anti-oxidative, and anti-inflammatory properties. Linagliptin could be a promising drug for hyperglycemia treatment during gestation.

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Hypothesis

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## [Disposable Diapers in Infancy and Their Potential Detrimental Impact on Male Fertility in Adulthood](#)

The overall human fertility rate has been continuously declining across the globe for a number of reasons. This review summarizes data, which proposes that the use of disposable diapers for newborns and infants may incur reproductive harm in adulthood. More than 70 years ago, a disposable synthetic waterproof baby diaper was developed, mainly to reduce the burden of working mothers. Modern diapers feature the same original design, which contains one unit of disposable material wrapped around the perineum to collect urine and feces. This design results in an increase in internal area temperatures by 2-4 °C, which can be detrimental to the function and development of reproductive cells. Moreover, the standard diaper template promotes the free passage of feces, including fecal bacteria, to the genitals, which can lead to urogenital infection and reproductive impairments. The available clinical data suggest that diaper use during infancy may have a negative impact on fertility after puberty. There is a critical need for additional studies to better assess the impact of diapers on reproductive health.

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Research Article

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## [Pattern of LRR in Endometrial Cancer and Identification of Predictive Factors](#)

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**Background:** Tailored adjuvant treatment is key to managing endometrial cancer effectively. Understanding prognostic factors of loco-regional failure and the impact of adjuvant treatment can help in treatment de-escalation without compromising survival outcomes.

The aim of this study was to assess the pattern of failure in endometrial cancer patients and to determine predicting Loco-Regional Recurrence (LRR) factors.

**Patients and methods:** Data were collected from 214 patients treated for endometrial cancer between 2005 and 2012 in Salah Azaiez Institute in Tunisia. All patients underwent upfront surgery followed by adjuvant brachytherapy with or without external beam radiation. The median follow-up period was 44 months. Univariate and multivariate analyses were performed to identify prognostic factors for LRR.

**Results:** The 5-year overall survival rate was 78.1%, and the 5-year progression-free survival rate was 80.1%. LRR occurred in 25 patients (11.6%), with a median recurrence time of 29 months (range 4 months - 46 months). Pelvic relapse was the most common site, occurring in 10 patients. Vaginal relapses were observed in 9 patients, and retro-peritoneal relapses were observed in 6 cases. FIGO stage, tumor grade, histologic type, Lympho-Vascular Space Invasion (LVSI), and delays in adjuvant treatment were significant predictors of LRR.

**Conclusion:** Identifying prognostic factors for LRR in endometrial cancer is crucial for optimizing adjuvant treatment strategies. Higher FIGO stages and the presence of LVSI were independent predictive factors for LRR. Tailored adjuvant treatment, taking these prognostic factors into account, is essential to improve patient outcomes and minimize unnecessary treatment-related toxicity.

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