

Endometriosis is a chronic inflammatory condition that often begins in adolescence and is associated with significant pain and reduced quality of life. Early, effective medical treatment is essential to control symptoms and prevent disease progression. Progestins are recommended as first-line therapy & dienogest (DNG), a selective oral progestin, has gained prominence due to its targeted action on endometriotic lesions and suitability for long-term use. This review summarizes the evidence supporting the efficacy and safety of dienogest in adolescent endometriosis.

## Summary of Evidences

Study	Study Design	Sample Size	Intervention & Duration	Key Findings
Ebert et al., 2017	Open-label, single-arm	111	DNG 2 mg/day, 52 weeks	Significant reduction in endometriosis-associated pain; temporary reduction in lumbar BMD with partial recovery after cessation
Yu et al., 2018	Open-label extension	220	DNG 2 mg/day, 28 weeks	Sustained pain reduction; no negative effect on BMD; bleeding decreased over time
Vignali et al., 2020	Prospective observational	70	DNG 2 mg/day, 12 months	Endometrioma volume reduced by >75%; marked improvement in dysmenorrhea and pelvic pain
Angioni et al., 2020	Prospective study	81	DNG 2 mg/day, 6 months	Significant reduction in endometrioma diameter
Ota et al., 2021	Retrospective cohort	321	DNG 1 mg/day, 3 months	No significant impact on bone turnover during bone growth phase
Techatraisak et al., 2022	Prospective, non-interventional	887	DNG 2 mg/day, 24 months	>80% symptom improvement; improved bleeding profile over time; high patient and physician satisfaction
Miao et al., 2022	Retrospective observational	104	DNG ± prior GnRH-a, 24 months	Effective and well tolerated as long-term and maintenance therapy

\*BMD = Bone mineral density

## Conclusion

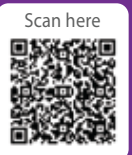
Dienogest is a safe and effective option for managing endometriosis, offering sustained pain relief, improved quality of life, and good tolerability with long-term use. Its oral convenience and favorable safety profile support its role as a preferred first-line and maintenance therapy, particularly in adolescents.

Ref: Tayade, Surekha et al. "Efficacy of Dienogest in Adolescent Endometriosis: A Narrative Review." Cureus vol. 15;3 e36729. 27 Mar. 2023, doi:10.7759/cureus.36729

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# Dienogest-A unique hybrid progestin for long-term compliance in endometriosis

**DINOGEST**<sup>®</sup>  
(Dienogest 2mg tablet)

Targeted oral progestin for long-term compliance in Endometriosis

# Drug Review

## About Endometriosis:<sup>1,2</sup>

- 1 Endometriosis affects roughly 10% (190 million) of reproductive age women and girls globally.
- 2 It is a chronic disease associated with severe, life-impacting pain during periods, sexual intercourse, bowel movements and/or urination, chronic pelvic pain, abdominal bloating, nausea, fatigue and sometimes depression, anxiety, and infertility.
- 3 There is currently no known cure for endometriosis and treatment is usually aimed at controlling symptoms.
- 4 Access to early diagnosis and effective treatment of endometriosis is important, however, diagnosing endometriosis can be challenging, with an average delay to diagnosis of seven years.

## Innovation in Endometriosis Treatment

- 1 Different pharmacologic treatment options are currently available. The most widely exerted medical therapy for endometriosis involves progestins (Dienogest) and oral contraceptives. Also, gonadotropin-releasing hormone (GnRH) agonists, GnRH- antagonists and androgen derivatives are used. New treatment options that are currently under investigation are selective progesterone receptor modulators (SPRMs), aromatase inhibitors (AI), cyclooxygenase (COX)-2 inhibitors, angiogenesis disruptors and immune modulators.<sup>3</sup>
- 2 Stringent guidelines recommend to use Dienogest as 1<sup>st</sup> line treatment option for the management of endometriosis<sup>4</sup>



## Dienogest-A unique hybrid progestin<sup>5</sup>

- 1 Dienogest's special chemical structure is responsible for its unique pharmacological profile

### Properties of 19-nortestosterone derivatives

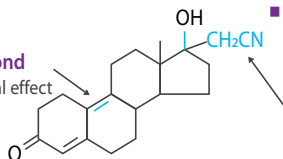
- Strong progestational effect on endometrium
- Relatively short plasma half life of 9-11 hours
- High oral bioavailability >90%

### Properties of progesterone derivatives

- Good tolerability & Anti-androgenic effects
- Relatively moderate inhibition of gonadotropin secretion (exerts no hypoestrogenic effect)
- Mainly peripheral action

### Additional double bond

- Strong progestational effect



### Cyanomethyl instead of an ethinyl group in the 17a position

- Low interaction with hepatic proteins eg Cytochrome P450- prevents drug interactions
- No relevant interaction with corticosteroid binding protein – no glucocorticoid side effect
- Prevents accumulation in the blood

## Proven Result <sup>6-9</sup>

- Reduces pain of endometriosis significantly
- Dienogest 2 mg/day orally demonstrated equivalent efficacy to depot Leuprolide Acetate at a standard dose in relieving the pain associated with endometriosis while offering advantages in safety and tolerability
- Evidence based treatment option in adolescent endometriosis patients
- Reduces chocolate cysts rapidly to approximately 70% of initial size after 12 months of treatment
- Effective for the prevention of endometriosis pain recurrence
- Proven safe in continuous use for as long as 7 years

Ref: 1. Salvatore Caruso, Marco Iraci, Stefano Cianci, et al. Effects of long-term treatment with Dienogest on the quality of life and sexual function of women affected by endometriosis-associated pelvic pain. Journal of Pain Research, Volume 12, 2019 - Issue 2. R Wattanayingchareonchai, S Rattanasiri, C Charakorn, et al. Postoperative hormonal treatment for prevention of endometrioma recurrence after ovarian cystectomy: a systematic review and network meta-analysis. BJOG. 2021 Jan; 128(1): 25–35; 3. Fabio Barra, Antonio Simone Lagana, Carolina Scala, et al. Pretreatment with dienogest in women with endometriosis undergoing IVF after a previous failed cycle. Reproductive Biomedicine Online. Volume 41, Issue 5, November 2020, Pages 859-868; 4. Paul L. McCormick. Dienogest: A Review of its Use in the Treatment of Endometriosis. Drugs 2010; 70(16): 2073-2088; 5. Adolf E Schindler. Dienogest in long-term treatment of endometriosis. Int J Womens Health. 2011; 3: 175–184; 6. Klaus Heinemann, Bruno Imthurn, Lena Marions, et al. Safety of Dienogest and Other Hormonal Treatments for Endometriosis in Real-World Clinical Practice (VIPOS): A Large Noninterventonal Study. Adv Ther. 2020 May; 37(5):2528-2537; 7. Thomas Römer. Long-term treatment of endometriosis with dienogest: retrospective analysis of efficacy and safety in clinical practice. October 2018 Archives of Gynecology and Obstetrics 298(4); 8. Andreas D Ebert, Liying Dong, et al. Dienogest 2 mg Daily in the Treatment of Adolescents with Clinically Suspected Endometriosis: The ViSanne Study to Assess Safety in ADOLescents. J Pediatr Adolesc Gynecol. Epub 2017 Feb 9; 9. Neil P Johnson, Lone Hummelshoj, et al. World Endometriosis Society consensus on the classification of endometriosis. December 2016 Human Reproduction.

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