

Literatur zum Artikel:

Endometriose

von Prof. Dr. med. Dr. med. h.c. mult. Hans-Rudolf Tinneberg, Prof. Dr. med. Dr. phil. Dr. med. h.c. mult. Andreas D. Ebert
und Prof. Dr. med. Dr. med. h.c. Karl-Werner Schweppe

Abkürzungsverzeichnis	
CA12.5	Tumormarker
COX-2	Enzym Cyclooxygenase-2
GnRH	Gonadotropin-Releasing-Hormon
HiF-1	Hypoxie-induzierter Faktor 1
IDEA	International Deep Endometriosis Analysis group
IL-6	Interleukin 6
KOK	kombinierte orale Kontrazeptiva
LH-RH	Luteinisierendes-Hormon-Releasing-Hormon, heute meist als GnRH bezeichnet
Ligg.	Ligamenta
miRNA	microRNA, Ribonukleinsäure
MMP	Matrix-Metalloproteinasen
MPA	Medroxyprogesteronacetat
MUSA	morphological sonographic assessment
NGF	Nerve Growth Factor
NOSE	Natural Orifice Specimen Extraction
NSAR	nichtsteroidale Antirheumatika
OK	orale Kontrazeptiva
PAEC	progesterone receptor modulator-associated endometrial changes; spezifische Veränderungen der Gebärmutterschleimhaut (Endometrium)
rAFS	revised American Fertility Society
TIAR	Tissue-Injury-and-Repair-Theorie Theorie der Gewebeverletzung und -reparatur
TIE	tief-infiltrierende Endometriose
TNF- α	Tumor Nekrose Faktor- α
TVS	Transvaginalsonographie
UPA	Ulipristalacetat
VEGF	vascular endothelial growth factor Gruppe von Proteinen als Signalmoleküle

- [1] Guidice LC, Kao LC: Endometriosis. The Lancet 2004; 364: 1789–1799.
- [2] Bulun SE: Endometriosis. N Engl J Med 2009;360:268–279.
- [3] Taylor HS, Kotlyar AM, Flores VA. Endometriosis is a chronic systemic disease: clinical challenges and novel innovations. Lancet. 2021;397:839–852.
- [4] Zondervan KT, Becker CM, Missmer StA: Endometriosis. N Engl J Med 2020;382:1244–1256
- [5] Ebert AD: Endometriose. Ein Wegweiser für die Praxis. De-Gruyter Verlag, Berlin-Boston 2019
- [6] Batt RE: A history of endometriosis. Springer Verlag Heidelberg 2011.
- [7] Schroen DC. Disputatio Inauguralis Medica de Ulceribus Uteri. Promotion, Universität Jena 1690.
- [8] Rokitsansky C. Über Uterusdrüsen-Neubildung in Uterus- und Ovarial-Sarcomen. Zeitschr Gesellschaft der Aerzte in Wien. 1860;16:577–581.
- [9] Recklinghausen F.v. Die Adenomyomata und Cystadenomata der Uterus und Tubenwandung: Ihre Abkunft von Resten des Wolffischen Körpers. Berlin: August Hirschwald Verlag; Berlin 1896.
- [10] Cullen T. Adenomyoma of the round ligament. Johns Hopkins Hosp Bull. 1896;7:112–113.
- [11] Crell J: Tumorem fundo uteri externe adherentem describit. Wittenberg 1739.
- [12] Iwanoff, NS Drüsiges zystenhaltiges Uterusfibromyom kompliziert durch Sarkom und Karzinom (Adenofibromyoma Cysticumsarcomatodescarcinomatosum). Mschr. Geburtsh. 1898;7:295–300
- [13] Meyer R. Über entzündliche heterotope Epithelwucherungen im weiblichen Genitalgebiete und über eines bis in die Wurzel des Mesocolon ausgedehnte benigne Wucherung des Darmepithels. Virchows Arch Pathol Anat Physiol Klin Med. 1909;195:487–537.
- [14] Meyer R. Über den Stand der Frage der Adenomyositis und Adenome im Allgemeinen und insbesondere über Adenomyositis seroepithelialis und Adenomyometritis sarcomatosa. Zbl Gynäkol. 1919;43:745–750.
- [15] Meyer R: Die Pathologie der Bindegewebsgeschwülste und Mischgeschwülste. In: veit J, Stoeckel W (Hrsg.): Handbuch der Gynäkologie. 1. Aufl., Verlag JF Bergmann, München 1930.
- [16] Sampson JA. The life history of ovarian hematomas (hemorrhagic cysts) of endometrial (Müllerian) type. Am J Obstet Gynecol. 1922;4:451–512.
- [17] Sampson JA. Peritoneal endometriosis due to the menstrual dissemination of endometrial tissue into the peritoneal cavity. Am J Obstet Gynecol. 1927;14: 422–69.
- [18] Movers F: Die Endometriose. Ferdinand Enke Verlag, Stuttgart 1971.
- [19] Hudelist G, Keckstein J, Wright J: The migrating adenomyoma: past views on the etiology of adenomyosis and endometriosis. Fertil Steril 2009; 92: 1536–1543.
- [20] Leyendecker G, Kunz G, Wildt L, Beil D, Deininger H. Uterine hyperperistalsis and dysperistalsis as dysfunctions of the mechanism of rapid sperm transport in patients with endometriosis and infertility. Hum Reprod. 1996;11:1542–1551.
- [21] Leyendecker G, Kunz G, Noe M, Herbertz M, Mall G. Endometriosis: a dysfunction and disease of the archimetra. Hum Reprod Update. 1998;4:752–762.
- [22] Wildt L, Kissler S, Licht P, Becker W. Sperm transport in the human female genital tract and its modulation by oxytocin assessed by hysterosalpingography, hysterotonography, electrohysterography and Doppler sonography. Hum Reprod Update. 1998;4:655–666.
- [23] Leyendecker G, Wildt L, Mall G. The pathophysiology of endometriosis and adenomyosis: tissue injury and repair. Arch Gynecol Obstet. 2009;280:529–538.
- [24] Leyendecker G, Bilgicyildirim A, Inacker M, Stalf T, Huppert P, Mall G, Böttcher B, Wildt L. Adenomyosis and endometriosis. Re-visiting their association and further insights into the mechanisms of auto-traumatisation. An MRI study. Arch Gynecol Obstet. 2015;291:917–932.
- [25] Leyendecker G, Wildt L, Laschke MW, Mall G: Archimetrosis: the evolution of a disease and its extant presentation: Pathogenesis and pathophysiology of archimetrosis (uterine adenomyosis and endometriosis). Arch Gynecol Obstet 2023;307: 93–112.
- [26] Habiba M, Benagiano G, Guo S-W: An appraisal of the Tissue Injura and repair (TIAR) Theory on the Pathogenesis of Endometriosis and Adenomyosis. Biomolecules 2023; 13: doi.org/10.3390/biom13060975
- [27] Guo S-W, Habiba M, Benagiano G: From retrograde menstruation to endometrial determinism and a brave new world of “root treatment” of endometriosis: destiny or a fanciful utopia? Biomolecules 2023; 13: doi.org/10.3390/biom13020336

- [28] Guo S-W: Various types of adenomyosis and endometriosis: in search of optimal management. *Fertil Steril* 2023; 119: 711–726.
- [29] Knapp V: How old is endometriosis? *Fertil Steril* 1999; 72: 10–14.
- [30] Nezhat C, Nezhat F, Nezhat C: Endometriosis: ancient disease, ancient treatments. *Fertil Steril* 2012; 98: S1–S62.
- [31] Harmsen, MJ., Van den Bosch, T., de Leeuw, RA., et al. Consensus on revised definitions of morphological sonographic assessment (MUSA) of adenomyosis: results of modified delphi procedure. *Ultrasound Obstet Gynecol* (2022) 60(1) 118–131. Doi: 10.1002/uog.24786
- [32] Guerriero, S., Condous, G., van den Bosch T. et al. Systematic approach to sonographic evaluation of the pelvis in women with suspected endometriosis, including terms, definitions and measurements: a consensus opinion from the International Deep Endometriosis Analysis (IDEA) group. *Ultrasound Obstet Gynecol* (2026); 48(3): 318–331. doi: 10.1002/uog.15955. Epub 2016 jun 28 PMID: 27349699
- [33] Keckstein, J., Saridogan, E., Ulrich, U.A., et al. The #Enzian classification: a comprehensive non-invasive and surgical description system for endometriosis. *Acta Obstet Gynecol Scand* (2021) 100(7) 1165–1175
- [34] Schneider, C., Oehmke, F., Tinneberg, H.-R. et al. MRI technique for the preoperative evaluation of deep infiltrating endometriosis: current status and protocol recommendation. *Clinical Radiology* (2016) 71 179–194
- [35] Bendifallah, S., Suisse, S., Puchar, A. et al. Salivary microRNA signature for diagnosis of endometriosis. *J Clin Med* (2022) 11(3); 612 doi: 10.3390/jcm 11
- [36] Bulun SE, Cheng Y-H, Pavone ME et al. Estrogen receptor-beta, estrogen receptor-alpha, and progesterone resistance in endometriosis. *Seminars in reproductive medicine* 2010; 28(1): 36–43
- [37] Burghaus S, Schäfer SD, Beckmann MW et al. Diagnosis and Treatment of Endometriosis. Guideline of the DGGG, SGGG and OEGGG (S2k Level, AWMF Registry Number 015/045, August 2020). *Geburtshilfe und Frauenheilkunde* 2021; 81(4): 422–446
- [38] Burghaus S, Schäfer SD, Beckmann MW et al. Diagnosis and Treatment of Endometriosis. Guideline of the DGGG, SGGG and OEGGG (S2k Level, AWMF Registry Number 015/045,) 2024 im Druck
- [39] Busacca M, Somigliana E, Bianchi S et al. Post-operative GnRH analogue treatment after conservative surgery for symptomatic endometriosis stage III-IV: a randomized controlled trial. *Human reproduction (Oxford, England)* 2001; 16(11): 2399–2402
- [40] Chapron C, Souza C, Borghese B et al. Oral contraceptives and endometriosis: the past use of oral contraceptives for treating severe primary dysmenorrhea is associated with endometriosis, especially deep infiltrating endometriosis. *Human reproduction (Oxford, England)* 2011; 26(8): 2028–2035
- [41] Giudice LC, As-Sanie S, Arjona Ferreira JC et al. Once daily oral relugolix combination therapy versus placebo in patients with endometriosis-associated pain: two replicate phase 3, randomised, double-blind, studies (SPIRIT 1 and 2). *Lancet (London, England)* 2022; 399(10343): 2267–2279
- [42] Foda, A.A., Aal, I.A.A. Metformin as a new therapy for endometriosis, its effects on both clinical picture and cytokines profile. *Middle East Fertility Society Journal* (2012) 17, 262–267
- [43] Juhasz-Böss I, Treeck O, Malik E, Ortmann O. Aromatasehemmer in der Therapie der Endometriose. *Gynäkologische Endokrinologie* 2006; 4(3): 174–180
- [44] Kitawaki J, Kusuki I, Yamanaka K, Suganuma I. Maintenance therapy with dienogest following gonadotropin-releasing hormone agonist treatment for endometriosis-associated pelvic pain. *European journal of obstetrics, gynecology, and reproductive biology* 2011; 157(2): 212–216
- [45] Merviel P, Lourdel E, Sanguin S, Gagneur O, Cabry R, Nasreddine A. Intérêt actuel des selective progesterone receptor modulators (SPRM) dans l'endométriose. *Gynecologie, obstetrique & fertilité* 2013; 41(9): 524–528
- [46] Muzii L, Marana R, Caruana P, Catalano GF, Margutti F, Panici PB. Postoperative administration of monophasic combined oral contraceptives after laparoscopic treatment of ovarian endometriomas: a prospective, randomized trial. *American journal of obstetrics and gynecology* 2000; 183(3): 588–592
- [47] Parazzini F, Ferraroni M, Bocciolone L, Tozzi L, Rubessa S, La Vecchia C. Contraceptive methods and risk of pelvic endometriosis. *Contraception* 1994; 49(1): 47–55
- [48] Park H-J, Koo Y-A, Yoon B-K, Choi D. Postoperative long-term maintenance therapy with oral contraceptives after gonadotropin-releasing hormone analog treatment in women with ovarian endometrioma. *Journal of minimally invasive gynecology* 2009; 16(1): 34–39

- [49] Rimbach S, Ulrich U, Schweppe KW. Surgical Therapy of Endometriosis: Challenges and Controversies. *Geburtshilfe und Frauenheilkunde* 2013; 73(9): 918–923
- [50] Sapmaz T, Coskun G, Saker D et al. Effects of metformin, letrozole and atorvastatin on inflammation and apoptosis in experimental peritoneal and ovarian endometriosis in the rat. *Pathology, research and practice* 2022; 235: 153951
- [51] Schweppe K-W. The place of dydrogesterone in the treatment of endometriosis and adenomyosis. *Maturitas* 2009; 65 Suppl 1: S23–7
- [52] Schweppe K-W, Ebert AD. Haben orale Kontrazeptiva einen Stellenwert für die Prophylaxe und Therapie der Endometriose? *Geburtshilfe und Frauenheilkunde* 2020; 80(07): 672–674
- [53] Schweppe K-W, Ring D. Peritoneal defects and the development of endometriosis in relation to the timing of endoscopic surgery during the menstrual cycle. *Fertility and sterility* 2002; 78(4): 763–766
- [54] Streuli I, Ziegler D de, Gayet V et al. In women with endometriosis anti-Müllerian hormone levels are decreased only in those with previous endometrioma surgery. *Human reproduction (Oxford, England)* 2012; 27(11): 3294–3303
- [55] Takamura M, Koga K, Osuga Y et al. Post-operative oral contraceptive use reduces the risk of ovarian endometrioma recurrence after laparoscopic excision. *Human reproduction (Oxford, England)* 2009; 24(12): 3042–3048
- [56] Taylor HS, Giudice LC, Lessey BA et al. Treatment of Endometriosis-Associated Pain with Elagolix, an Oral GnRH Antagonist. *The New England journal of medicine* 2017; 377(1): 28–40
- [57] Varma R, Sinha D, Gupta JK. Non-contraceptive uses of levonorgestrel-releasing hormone system (LNG-IUS)--a systematic enquiry and overview. *European journal of obstetrics, gynecology, and reproductive biology* 2006; 125(1): 9–28
- [58] Vercellini P, Frontino G, Giorgi O de, Pietropaolo G, Pasin R, Crosignani PG. Continuous use of an oral contraceptive for endometriosis-associated recurrent dysmenorrhea that does not respond to a cyclic pill regimen. *Fertility and sterility* 2003; 80(3): 560–563
- [59] Vercellini P, Somigliana E, Daguati R, Vigano P, Meroni F, Crosignani PG. Postoperative oral contraceptive exposure and risk of endometrioma recurrence. *American journal of obstetrics and gynecology* 2008; 198(5): 504.e1–5
- [60] Wagenfeld A, Saunders PTK, Whitaker L, Critchley HOD. Selective progesterone receptor modulators (SPRMs): progesterone receptor action, mode of action on the endometrium and treatment options in gynecological therapies. *Expert opinion on therapeutic targets* 2016; 20(9): 1045–1054
- [61] Wu D, Hu M, Hong L et al. Clinical efficacy of add-back therapy in treatment of endometriosis: a meta-analysis. *Archives of gynecology and obstetrics* 2014; 290(3): 513–523
- [62] Zorbas KA, Economopoulos KP, Vlahos NF. Continuous versus cyclic oral contraceptives for the treatment of endometriosis: a systematic review. *Archives of gynecology and obstetrics* 2015; 292(1): 37–43