

Bölüm 20

İNFERTİLİTE YÖNETİMİNDE LAPAROSKOPİNİN ROLÜ

Özlem KAYACIK GÜNDAY¹

İ GİRİŞ

İnfertilite 12 ay veya daha fazla düzenli korunmasız cinsel ilişkiden sonra klinik gebelik elde edilememesi ile tanımlanan, üreme sisteminin bir hastalığıdır (1). Aynı zamanda, önemli bir sosyal ve ekonomik problemdir. İnfertil bir çiftin değerlendirilmesinde, başlangıç tanı testleri, orta luteal faz progesteron testi, histerosalpingografi (HSG) ve semen analizidir.

Pekçok çift çocuk sahibi olmayı ertelemektedir ve artan yaşla beraber çocuk sahibi olma ve gebeliği sürdürme ihtimali de azalmaktadır. Bu noktada, infertil olan çiftlerde, invitro fertilizasyon (IVF) sonrası görülen implantasyon başarısızlığı da önemli bir sorun olmaktadır (2).

İnfertil hastaların değerlendirilmesinde ve tedavisinde cerrahi tedavi tartışmalıdır. Hastaların değerlendirilmesinde, laparoskopi şu anda rutin olarak kullanılmamaktadır ve her hasta ve klinik durum için ayrı ayrı değerlendirme yapılmalıdır.

1990' lı yıllarda, infertilitede laparoskopi son adım olarak kullanılırken, günümüzde üremeye yardımcı tedavi (ÜYT) yöntemlerindeki gelişme ve tanı sırasında verimli ve uygun maliyetin gözönünde bulundurulması nedeni ile minimal invaziv yöntemler ön plana geçmiştir (3).

İNFERTİL HASTALARDA TUBAL CERRAHİNİN ROLÜ

Tubal nedenler, infertilite vakalarının % 25-35' inden sorumludur (4). Pelvik inflamatuvar hastalık, tubal hastalığın en sık nedenidir ve fallop tüpünde multipl tutulum yapabilir (5). Geçirilmiş ektopik gebelik, bilinen endometriozis veya önceki pelvik cerrahi öyküsü de tubal faktör infertilitesi için risk faktörüdür. Herhangi bir risk faktörü olmayan hastalarda, klamidyaya antikor testi negatif ise tubal patoloji olasılığı %15' den daha azdır (6). Ancak pozitif olduğu durumlarda da, chlamydia pneumoniae immüno globulin G ile çapraz reaktivite gösterebildiği için, gerçek ve persiste enfeksiyon ayrımı yapılamaz ve enfeksiyonun tubal hasarla sonuçlanıp sonuçlanmadığını göstermez (7).

Hull- Rutherford (2002) sınıflandırmasına göre, infertil kadınlarda tubal hasarın derecesi, hafif, orta ve şiddetli olmak üzere üç kategoriye ayrılır (8). Tanı histerosalpingografi (HSG) veya laparoskopi ile doğrulanır (Şekil 1). HSG obstrüksiyonu gösterdiğinde, tubanın açık olma olasılığı yüksek (yaklaşık %60) iken, HSG tubal açıklık gösterdiğinde tubanın tıkalı olma olasılığı düşüktür (yaklaşık %5). HSG' ye göre genellikle tedaviden bağımsız gebelik oranı, her iki tuba da açık olduğunda en yüksektir (3). Büyük araştır-

¹ Dr. Öğr. Üyesi, Afyonkarahisar Sağlık Bilimleri Üniversitesi Tıp Fakültesi Kadın Hastalıkları ve Doğum AD, kayacikozlem@yahoo.com.tr

pelvik adezyon oluşumunu artırabileceğini ve yumurtalık rezervini azaltabileceğini bildirdiler (115).

Gözlemsel çalışmalar, CC' ye dirençli PKOS' lu kadınlarda, LOD' in spontan ovulasyon ve gebelik oranlarını, sırasıyla %30' dan %90' a ve %13' den %88' e kadar iyileştirebileceğini göstermiştir (116, 117).

Geniş bir RKÇ' da, PKOS hastalarında LOD sonrası döngü başına %70 ovulasyon oranı, %76 kümülatif konsepsiyon oranı ve %64 canlı doğum oranı bildirilmiştir (118). Diğer bir RKÇ' da, PKOS' lu 87 hastada tek taraflı ve iki taraflı LOD karşılaştırılmış ve her iki grupta da ovulasyon, gebelik ve düşük oranları benzer bulunmuştur. Bu nedenle, tek taraflı LOD, bilateral kadar başarılıdır ve daha az zaman alır (119). Yine bilateral ve unilateral LOD' yi karşılaştıran bir meta-analizde, 6 aylık takipte unilateral LOD olanlarda antral folikül sayısı daha yüksek bulundu (116). LOD başarısını etkileyen faktörlerin araştırıldığı bir çalışmada, hasta yaşı (< 35), BMI ve infertilite süresi (<3 yıl), başarı için önemli öngörücülerdi (120).

İşlem sonrası adezyon riski için yapılan bir RKÇ' da, LOD sonrası, ikinci bakış laparoskopisinde, kadınların % 60' ı ve overlerin % 46' sında adezyon izlenmiştir. Delme sayısından bağımsız olarak, sol overde adezyon riski daha yüksek idi (121). Ayrıca diğer önemli bir endişe olan over rezervine etkisi ile ilgili olarak, PKOS' lu kadınlarda LOD ile ilişkili azalmış yumurtalık rezervi veya erken yumurtalık yetmezliği kanıtı olmadığı bildirilmiştir (122). Ancak LOD' nin AMH ve ovaryan rezerv üzerine etkisini değerlendiren bir meta-analizde, takip süresi, kullanılan AMH kiti ve uygulanan enerji miktarına göre bir alt grup analizi yapılmış ve AMH düzeylerinde istatistiksel olarak anlamlı bir düşüş izlenmiştir. Ancak bunun over rezervinde gerçek bir hasarı mı, yoksa preoperatif zaten yüksek AMH düzeylerinin normale dönmesi mi olduğu açık değildir (123).

Farquhar ve ark. , LOD ve gonadotropinler arasında canlı doğum ve klinik gebelik oranları arasında fark bulmadılar ve OR sırasıyla, 1. 04 (%95 güven aralığı, 0. 59-1. 85) ve 1. 08 (%95 güven aralığı, 0. 69-1. 71) olarak bildirdiler (124). Gonadotropin kullanımına benzer gebelik oranları sağlamanın yanı sıra, LOD, döngünün izlenmesini gerektirmez. Tek bir cerrahi tedavi ile birkaç ovulasyon elde edilebilirken, bir gonadotropin döngüsü tek bir ovulasyon sağlar.

Bazı PCOS' lu kadınlarda tubal faktör, endometriozis gibi infertilite için başka cerrahi endikasyonlar olabilir ve bu durumda laparoskopik cerrahi sırasında eş zamanlı olarak LOD kullanımını iyi bir seçenek olabilir, ancak birinci basamak tedavide kullanımı önerilmez (125).

Sonuç olarak, CC' a dirençli PKOS hastalarında, unifoliküler ovulasyonu sağlamak, çoğul gebelik riskini azaltmak ve tedavi maliyetlerini azaltmak için laparoskopik ovaryan drilling önerilebilir.

KAYNAKLAR

1. Zegers-Hochschild F, Adamson GD, de Mouzon J, Ishihara O, Mansour R, Nygren K, et al. International Committee for Monitoring Assisted Reproductive Technology (ICMART) and the World Health Organization (WHO) revised glossary of ART terminology, 2009. *Fertil Steril.* 2009;92(5): 1520-4. Epub 2009/10/16. doi: 10. 1016/j. fertnstert. 2009. 09. 009. PubMed PMID: 19828144.
2. Nowak I, Wilczyńska K, Wilczyński JR, Malinowski A, Radwan P, Radwan M, et al. KIR, LILRB and their Ligands' Genes as Potential Biomarkers in Recurrent Implantation Failure. *Arch Immunol Ther Exp (Warsz).* 2017;65(5):391-9. Epub 2017/05/20. doi: 10. 1007/s00005-017-0474-6. PubMed PMID: 28523429; PubMed Central PMCID: PMC5602049.
3. Fritz MA, Speroff L. Menopause and the perimenopausal transition. *Clinical Gynecologic Endocrinology and Infertility.* Philadelphia, PA: Wolters Kluwer; 2011.

4. Serafini P, Batzofin J. Diagnosis of female infertility. A comprehensive approach. *J Reprod Med.* 1989;34(1) :29-40. Epub 1989/01/01. PubMed PMID: 2649667.
5. Honoré GM, Holden AE, Schenken RS. Pathophysiology and management of proximal tubal blockage. *Fertil Steril.* 1999;71(5) :785-95. Epub 1999/05/07. doi: 10. 1016/s0015-0282(99) 00014-x. PubMed PMID: 10231034.
6. den Hartog JE, Morré SA, Land JA. Chlamydia trachomatis-associated tubal factor subfertility: Immunogenetic aspects and serological screening. *Hum Reprod Update.* 2006;12(6) : 719-30. Epub 2006/07/13. doi: 10. 1093/humupd/dml030. PubMed PMID: 16832042.
7. Infertility Workup for the Women's Health Specialist: ACOG Committee Opinion, Number 781. *Obstet Gynecol.* 2019;133(6) :e377-e84. Epub 2019/05/29. doi: 10. 1097/aog. 0000000000003271. PubMed PMID: 31135764.
8. Akande VA, Cahill DJ, Wardle PG, Rutherford AJ, Jenkins JM. The predictive value of the "Hull & Rutherford" classification for tubal damage. *Bjog.* 2004;111(11) :1236-41. Epub 2004/11/04. doi: 10. 1111/j. 1471-0528. 2004. 00408. x. PubMed PMID: 15521868.
9. Borrero SB, Reeves MF, Schwarz EB, Bost JE, Creinin MD, Ibrahim SA. Race, insurance status, and desire for tubal sterilization reversal. *Fertil Steril.* 2008;90(2) :272-7. Epub 2007/09/21. doi: 10. 1016/j. fertnstert. 2007. 06. 041. PubMed PMID: 17880952; PubMed Central PMCID: PMC6464768
10. Mol BW, Collins JA, Burrows EA, van der Veen F, Bossuyt PM. Comparison of hysterosalpingography and laparoscopy in predicting fertility outcome. *Hum Reprod.* 1999;14(5) :1237-42. Epub 1999/05/15. doi: 10. 1093/humrep/14. 5. 1237. PubMed PMID: 10325270.
11. Dessole S, Meloni GB, Capobianco G, Manzoni MA, Ambrosini G, Canalis GC. A second hysterosalpingography reduces the use of selective technique for treatment of a proximal tubal obstruction. *Fertil Steril.* 2000;73(5) :1037-9. Epub 2000/04/28. doi: 10. 1016/s0015-0282(00) 00415-5. PubMed PMID: 10785234.
12. Evers JL, Land JA, Mol BW. Evidence-based medicine for diagnostic questions. *Semin Reprod Med.* 2003;21(1) :9-15. Epub 2003/06/14. doi: 10. 1055/s-2003-39990. PubMed PMID: 12806555.
13. Mohiyiddeen L, Hardiman A, Fitzgerald C, Hughes E, Mol BW, Johnson N, et al. Tubal flushing for subfertility. *Cochrane Database Syst Rev.* 2015;2015(5) :Cd003718. Epub 2015/05/02. doi: 10. 1002/14651858. CD003718. pub4. PubMed PMID: 25929235; PubMed Central PMCID: PMC6464768
14. Tros R, van Kessel M, Oosterhuis J, Kuchenbecker W, Bongers M, Mol BW, et al. Transvaginal hydrolaparoscopy and laparoscopy. *Reprod Biomed Online.* 2020;40(1) :105-12. Epub 2020/01/04. doi: 10. 1016/j. rbmo. 2019. 10. 011. PubMed PMID: 31899124.
15. Chua SJ, Akande VA, Mol BW. Surgery for tubal infertility. *Cochrane Database Syst Rev.* 2017;1(1) :Cd006415. Epub 2017/01/24. doi: 10. 1002/14651858. CD006415. pub3. PubMed PMID: 28112384; PubMed Central PMCID: PMC6464768
16. Control CfD, Prevention. American Society for Reproductive Medicine, Society for Assisted Reproductive Technology. 2009 assisted reproductive technology success rates: national summary and fertility clinic reports. Atlanta: Centers for Disease Control and Prevention. 2011.
17. McDonald SD, Murphy K, Beyene J, Ohlsson A. Perinatal outcomes of singleton pregnancies achieved by in vitro fertilization: a systematic review and meta-analysis. *J Obstet Gynaecol Can.* 2005;27(5) :449-59. Epub 2005/08/16. doi: 10. 1016/s1701-2163(16) 30527-8. PubMed PMID: 16100639.
18. De Silva PM, Chu JJ, Gallos ID, Vidyasagar AT, Robinson L, Coomarasamy A. Fallopian tube catheterization in the treatment of proximal tubal obstruction: a systematic review and meta-analysis. *Hum Reprod.* 2017;32(4) :836-52. Epub 2017/02/12. doi: 10. 1093/humrep/dex022. PubMed PMID: 28184438.
19. Pinto AB, Hovsepian DM, Wattanakumtornkul S, Pilgram TK. Pregnancy outcomes after fallopian tube recanalization: oil-based versus water-soluble contrast agents. *J Vasc Interv Radiol.* 2003;14(1) :69-74. Epub 2003/01/15. doi: 10. 1097/01. rvi. 0000052293. 26939. 10. PubMed PMID: 12525588.
20. Farhi J, Ben-Haroush A, Lande Y, Fisch B. Role of treatment with ovarian stimulation and intra-

- uterine insemination in women with unilateral tubal occlusion diagnosed by hysterosalpingography. *Fertil Steril.* 2007;88(2) :396-400. Epub 2007/04/21. doi: 10.1016/j.fertnstert.2006.11.187. PubMed PMID: 17445812.
21. The American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, müllerian anomalies and intrauterine adhesions. *Fertil Steril.* 1988;49(6) :944-55. Epub 1988/06/01. doi: 10.1016/s0015-0282(16)59942-7. PubMed PMID: 3371491.
 22. Bontis JN, Theodoridis TD. Laparoscopic management of hydrosalpinx. *Ann N Y Acad Sci.* 2006;1092:199-210. Epub 2007/02/20. doi: 10.1196/annals.1365.017. PubMed PMID: 17308145.
 23. Nackley AC, Muasher SJ. The significance of hydrosalpinx in in vitro fertilization. *Fertil Steril.* 1998;69(3) :373-84. Epub 1998/04/09. doi: 10.1016/s0015-0282(97)00484-6. PubMed PMID: 9531862.
 24. Tulandi T, Collins JA, Burrows E, Jarrell JF, McInnes RA, Wrixon W, et al. Treatment-dependent and treatment-independent pregnancy among women with periadnexal adhesions. *Am J Obstet Gynecol.* 1990;162(2) :354-7. Epub 1990/02/01. doi: 10.1016/0002-9378(90)90384-j. PubMed PMID: 2309813.
 25. Salpingectomy for hydrosalpinx prior to in vitro fertilization. *Fertil Steril.* 2008;90(5 Suppl) :S66-8. Epub 2008/11/26. doi: 10.1016/j.fertnstert.2008.08.089. PubMed PMID: 19007649.
 26. Strandell A, Lindhard A, Waldenström U, Thorburn J, Janson PO, Hamberger L. Hydrosalpinx and IVF outcome: a prospective, randomized multicentre trial in Scandinavia on salpingectomy prior to IVF. *Hum Reprod.* 1999;14(11) :2762-9. Epub 1999/11/05. doi: 10.1093/humrep/14.11.2762. PubMed PMID: 10548619.
 27. Zeyneloglu HB, Arici A, Olive DL. Adverse effects of hydrosalpinx on pregnancy rates after in vitro fertilization-embryo transfer. *Fertil Steril.* 1998;70(3) :492-9. Epub 1998/10/03. doi: 10.1016/s0015-0282(98)00200-3. PubMed PMID: 9757878.
 28. Camus E, Poncelet C, Goffinet F, Wainer B, Merlet F, Nisand I, et al. Pregnancy rates after in-vitro fertilization in cases of tubal infertility with and without hydrosalpinx: a meta-analysis of published comparative studies. *Hum Reprod.* 1999;14(5) :1243-9. Epub 1999/05/15. doi: 10.1093/humrep/14.5.1243. PubMed PMID: 10325271.
 29. Murray DL, Sagoskin AW, Widra EA, Levy MJ. The adverse effect of hydrosalpinges on in vitro fertilization pregnancy rates and the benefit of surgical correction. *Fertil Steril.* 1998;69(1) :41-5. Epub 1998/02/11. doi: 10.1016/s0015-0282(97)00447-0. PubMed PMID: 9457930.
 30. Shelton KE, Butler L, Toner JP, Oehninger S, Muasher SJ. Salpingectomy improves the pregnancy rate in in-vitro fertilization patients with hydrosalpinx. *Hum Reprod.* 1996;11(3) :523-5. Epub 1996/03/01. doi: 10.1093/humrep/11.3.523. PubMed PMID: 8671258.
 31. Chan CC, Ng EH, Li CF, Ho PC. Impaired ovarian blood flow and reduced antral follicle count following laparoscopic salpingectomy for ectopic pregnancy. *Hum Reprod.* 2003;18(10) :2175-80. Epub 2003/09/26. doi: 10.1093/humrep/deg411. PubMed PMID: 14507841.
 32. Dar P, Sachs GS, Strassburger D, Bukovsky I, Arieli S. Ovarian function before and after salpingectomy in artificial reproductive technology patients. *Hum Reprod.* 2000;15(1) :142-4. Epub 1999/12/28. doi: 10.1093/humrep/15.1.142. PubMed PMID: 10611204.
 33. Déchaud H, Daurès JP, Arnal F, Humeau C, Hédon B. Does previous salpingectomy improve implantation and pregnancy rates in patients with severe tubal factor infertility who are undergoing in vitro fertilization? A pilot prospective randomized study. *Fertil Steril.* 1998;69(6) :1020-5. Epub 1998/06/17. doi: 10.1016/s0015-0282(98)00077-6. PubMed PMID: 9627287.
 34. Stadtmauer LA, Riehl RM, Toma SK, Talbert LM. Cauterization of hydrosalpinges before in vitro fertilization is an effective surgical treatment associated with improved pregnancy rates. *Am J Obstet Gynecol.* 2000;183(2) :367-71. Epub 2000/08/15. doi: 10.1067/mob.2000.107671. PubMed PMID: 10942471.
 35. Cohen A, Almog B, Tulandi T. Hydrosalpinx Sclerotherapy Before In Vitro Fertilization: Systematic Review and Meta-analysis. *J Minim Invasive Gynecol.* 2018;25(4) :600-7. Epub 2017/12/19. doi: 10.1016/j.jmig.2017.12.004. PubMed PMID: 29248666.
 36. Rodgers AK, Goldberg JM, Hammel JP, Falcone T. Tubal anastomosis by robotic compared with outpatient minilaparotomy. *Obstet Gynecol.*

- 2007;109(6) :1375-80. Epub 2007/06/02. doi: 10.1097/01.AOG.0000264591.43544.0f. PubMed PMID: 17540810.
37. van Seeters JAH, Chua SJ, Mol BWJ, Koks CAM. Tubal anastomosis after previous sterilization: a systematic review. *Hum Reprod Update*. 2017;23(3) :358-70. Epub 2017/03/24. doi: 10.1093/humupd/dmx003. PubMed PMID: 28333337.
 38. Berger GS, Thorp JM, Jr., Weaver MA. Effectiveness of bilateral tubotubal anastomosis in a large outpatient population. *Hum Reprod*. 2016;31(5) :1120-5. Epub 2016/03/17. doi: 10.1093/humrep/dew038. PubMed PMID: 26980770; PubMed Central PMCID: PMC4840024.
 39. Liu J, Bardawil E, Lin Q, Liang B, Wang W, Wu C, et al. Transvaginal natural orifice transluminal endoscopic surgery tubal reanastomosis: a novel route for tubal surgery. *Fertil Steril*. 2018;110(1) :182. Epub 2018/06/26. doi: 10.1016/j.fertnstert.2018.02.139. PubMed PMID: 29937153.
 40. Kim JD, Kim KS, Doo JK, Rhyeu CH. A report on 387 cases of microsurgical tubal reversals. *Fertil Steril*. 1997;68(5) :875-80. Epub 1997/12/09. doi: 10.1016/s0015-0282(97)00339-7. PubMed PMID: 9389819.
 41. Santos-Ribeiro S, Tournaye H, Polyzos NP. Trends in ectopic pregnancy rates following assisted reproductive technologies in the UK: a 12-year nationwide analysis including 160 000 pregnancies. *Hum Reprod*. 2016;31(2) :393-402. Epub 2016/01/03. doi: 10.1093/humrep/dev315. PubMed PMID: 26724796.
 42. Boeckxstaens A, Devroey P, Collins J, Tournaye H. Getting pregnant after tubal sterilization: surgical reversal or IVF? *Hum Reprod*. 2007;22(10) :2660-4. Epub 2007/08/03. doi: 10.1093/humrep/dem248. PubMed PMID: 17670765.
 43. Wordsworth S, Buchanan J, Mollison J, Harrild K, Robertson L, Tay C, et al. Clomifene citrate and intrauterine insemination as first-line treatments for unexplained infertility: are they cost-effective? *Hum Reprod*. 2011;26(2) :369-75. Epub 2010/12/04. doi: 10.1093/humrep/deq315. PubMed PMID: 21127355.
 44. Tanahatöe S, Hompes PG, Lambalk CB. Accuracy of diagnostic laparoscopy in the infertility work-up before intrauterine insemination. *Fertil Steril*. 2003;79(2) :361-6. Epub 2003/02/06. doi: 10.1016/s0015-0282(02)04686-1. PubMed PMID: 12568846.
 45. Tanahatöe SJ, Lambalk CB, Hompes PG. The role of laparoscopy in intrauterine insemination: a prospective randomized reallocation study. *Hum Reprod*. 2005;20(11) :3225-30. Epub 2005/07/12. doi: 10.1093/humrep/dei201. PubMed PMID: 16006455.
 46. Johnson NP, Hummelshøj L, Adamson GD, Keckstein J, Taylor HS, Abrao MS, et al. World Endometriosis Society consensus on the classification of endometriosis. *Hum Reprod*. 2017;32(2) :315-24. Epub 2016/12/07. doi: 10.1093/humrep/dew293. PubMed PMID: 27920089.
 47. Ozkan S, Murk W, Arici A. Endometriosis and infertility: epidemiology and evidence-based treatments. *Ann N Y Acad Sci*. 2008;1127:92-100. Epub 2008/04/30. doi: 10.1196/annals.1434.007. PubMed PMID: 18443335.
 48. Soliman AM, Yang H, Du EX, Kelley C, Winkel C. The direct and indirect costs associated with endometriosis: a systematic literature review. *Hum Reprod*. 2016;31(4) :712-22. Epub 2016/02/07. doi: 10.1093/humrep/dev335. PubMed PMID: 26851604.
 49. Nisolle M, Donnez J. Peritoneal endometriosis, ovarian endometriosis, and adenomyotic nodules of the rectovaginal septum are three different entities. *Fertility and Sterility*. 1997;68(4) :585-96. doi: [https://doi.org/10.1016/S0015-0282\(97\)00191-X](https://doi.org/10.1016/S0015-0282(97)00191-X).
 50. Missmer SA, Hankinson SE, Spiegelman D, Barbieri RL, Marshall LM, Hunter DJ. Incidence of laparoscopically confirmed endometriosis by demographic, anthropometric, and lifestyle factors. *Am J Epidemiol*. 2004;160(8) :784-96. Epub 2004/10/07. doi: 10.1093/aje/kwh275. PubMed PMID: 15466501.
 51. Johnson NP. Review of lipiodol treatment for infertility - an innovative treatment for endometriosis-related infertility? *Aust N Z J Obstet Gynaecol*. 2014;54(1) :9-12. Epub 2013/10/22. doi: 10.1111/ajo.12141. PubMed PMID: 24138402.
 52. Yazdani A. Surgery or in vitro fertilization: The simplicity of this question belies its complexity. *Aust N Z J Obstet Gynaecol*. 2017;57(6) :676-8. Epub 2017/12/07. doi: 10.1111/ajo.12743. PubMed PMID: 29210045.
 53. Strathy JH, Molgaard CA, Coulam CB, Melton LJ, 3rd. Endometriosis and infertility: a laparoscopic study of endometriosis among fertile and infertile women. *Fertil Steril*. 1982;38(6) :667-72.

- Epub 1982/12/01. doi: 10. 1016/s0015-0282(16) 46691-4. PubMed PMID: 6216124.
54. Johnson NP, Hummelshoj L. Consensus on current management of endometriosis. *Hum Reprod.* 2013;28(6) :1552-68. Epub 2013/03/27. doi: 10. 1093/humrep/det050. PubMed PMID: 23528916.
 55. Omland AK, Tanbo T, Dale PO, Abyholm T. Artificial insemination by husband in unexplained infertility compared with infertility associated with peritoneal endometriosis. *Hum Reprod.* 1998;13(9) :2602-5. Epub 1998/11/07. doi: 10. 1093/humrep/13. 9. 2602. PubMed PMID: 9806292.
 56. Nuojuua-Huttunen S, Tomas C, Bloigu R, Tuomivaara L, Martikainen H. Intrauterine insemination treatment in subfertility: an analysis of factors affecting outcome. *Hum Reprod.* 1999;14(3) :698-703. Epub 1999/04/30. doi: 10. 1093/humrep/14. 3. 698. PubMed PMID: 10221698.
 57. Marcoux S, Maheux R, Bérubé S. Laparoscopic surgery in infertile women with minimal or mild endometriosis. Canadian Collaborative Group on Endometriosis. *N Engl J Med.* 1997;337(4): 217-22. Epub 1997/07/24. doi: 10. 1056/nejm199707243370401. PubMed PMID: 9227926.
 58. Parazzini F. Ablation of lesions or no treatment in minimal-mild endometriosis in infertile women: a randomized trial. Gruppo Italiano per lo Studio dell'Endometriosi. *Hum Reprod.* 1999;14(5): 1332-4. Epub 1999/05/15. doi: 10. 1093/humrep/14. 5. 1332. PubMed PMID: 10325288.
 59. Hodgson RM, Lee HL, Wang R, Mol BW, Johnson N. Interventions for endometriosis-related infertility: a systematic review and network meta-analysis. *Fertil Steril.* 2020;113(2) :374-82. e2. Epub 2020/02/29. doi: 10. 1016/j. fertnstert. 2019. 09. 031. PubMed PMID: 32106991.
 60. Leyland N, Casper R, Laberge P, Singh SS. Endometriosis: diagnosis and management. *J Obstet Gynaecol Can.* 2010;32(7 Suppl 2) :S1-32. Epub 2011/05/10. PubMed PMID: 21545757.
 61. Endometriosis and infertility: a committee opinion. *Fertility and Sterility.* 2012;98(3) :591-8. doi: <https://doi.org/10.1016/j.fertnstert.2012.05.031>.
 62. Opøien HK, Fedorcsak P, Byholm T, Tanbo T. Complete surgical removal of minimal and mild endometriosis improves outcome of subsequent IVF/ICSI treatment. *Reprod Biomed Online.* 2011;23(3) :389-95. Epub 2011/07/19. doi: 10. 1016/j. rbmo. 2011. 06. 002. PubMed PMID: 21764382.
 63. Kho RM, Andres MP, Borrelli GM, Neto JS, Zanluchi A, Abrão MS. Surgical treatment of different types of endometriosis: Comparison of major society guidelines and preferred clinical algorithms. *Best Pract Res Clin Obstet Gynaecol.* 2018;51:102-10. Epub 2018/03/17. doi: 10. 1016/j. bpubgyn. 2018. 01. 020. PubMed PMID: 29545114.
 64. Goodman LR, Goldberg JM, Flyckt RL, Gupta M, Harwalker J, Falcone T. Effect of surgery on ovarian reserve in women with endometriomas, endometriosis and controls. *Am J Obstet Gynecol.* 2016;215(5) :589. e1-. e6. Epub 2016/10/30. doi: 10. 1016/j. ajog. 2016. 05. 029. PubMed PMID: 27242204.
 65. Van Gorp T, Amant F, Neven P, Vergote I, Moerman P. Endometriosis and the development of malignant tumours of the pelvis. A review of literature. *Best Pract Res Clin Obstet Gynaecol.* 2004;18(2) :349-71. Epub 2004/05/26. doi: 10. 1016/j. bpubgyn. 2003. 03. 001. PubMed PMID: 15157647.
 66. Mostoufzadeh M, Scully RE. Malignant tumors arising in endometriosis. *Clin Obstet Gynecol.* 1980;23(3) :951-63. Epub 1980/09/01. PubMed PMID: 7418292.
 67. Stern RC, Dash R, Bentley RC, Snyder MJ, Haney AF, Robboy SJ. Malignancy in endometriosis: frequency and comparison of ovarian and extraovarian types. *Int J Gynecol Pathol.* 2001;20(2): 133-9. Epub 2001/04/11. doi: 10. 1097/00004347-200104000-00004. PubMed PMID: 11293158.
 68. Salihoglu KN, Dilbaz B, Cirik DA, Ozelci R, Ozkaya E, Mollamahmutoglu L. Short-Term Impact of Laparoscopic Cystectomy on Ovarian Reserve Tests in Bilateral and Unilateral Endometriotic and Nonendometriotic Cysts. *J Minim Invasive Gynecol.* 2016;23(5) :719-25. Epub 2016/03/05. doi: 10. 1016/j. jmig. 2016. 02. 018. PubMed PMID: 26940401.
 69. Busacca M, Olive DL. Treatment of endometriosis associated with infertility. *Reconstructive and Reproductive Surgery in Gynecology: CRC Press; 2010. p. 94-6.*
 70. Garcia-Velasco JA, Mahutte NG, Corona J, Zúñiga V, Gilés J, Arici A, et al. Removal of endometriomas before in vitro fertilization does not

- improve fertility outcomes: a matched, case-control study. *Fertil Steril.* 2004;81(5) :1194-7. Epub 2004/05/12. doi: 10. 1016/j. fertnstert. 2003. 04. 006. PubMed PMID: 15136074.
71. Demiroglu A, Guven S, Baykal C, Gurgan T. Effect of endometrioma cystectomy on IVF outcome: a prospective randomized study. *Reprod Biomed Online.* 2006;12(5) :639-43. Epub 2006/06/23. doi: 10. 1016/s1472-6483(10) 61192-3. PubMed PMID: 16790114.
 72. Endometriosis and infertility. *Fertil Steril.* 2006;86(5 Suppl 1) :S156-60. Epub 2006/10/24. doi: 10. 1016/j. fertnstert. 2006. 08. 014. PubMed PMID: 17055813.
 73. Littman E, Giudice L, Lathi R, Berker B, Milki A, Nezhat C. Role of laparoscopic treatment of endometriosis in patients with failed in vitro fertilization cycles. *Fertil Steril.* 2005;84(6) :1574-8. Epub 2005/12/20. doi: 10. 1016/j. fertnstert. 2005. 02. 059. PubMed PMID: 16359945.
 74. Ruffo G, Sartori A, Crippa S, Partelli S, Barugola G, Manzoni A, et al. Laparoscopic rectal resection for severe endometriosis of the mid and low rectum: technique and operative results. *Surg Endosc.* 2012;26(4) :1035-40. Epub 2011/11/01. doi: 10. 1007/s00464-011-1991-8. PubMed PMID: 22038165.
 75. Abrao MS, Gonçalves MO, Dias JA, Jr. , Podgaec S, Chamie LP, Blasbalg R. Comparison between clinical examination, transvaginal sonography and magnetic resonance imaging for the diagnosis of deep endometriosis. *Hum Reprod.* 2007;22(12): 3092-7. Epub 2007/10/20. doi: 10. 1093/humrep/dem187. PubMed PMID: 17947378.
 76. Pabuccu R, Gomel V. General principles in preservation of fertility in gynecologic surgery. *Reconstructive and reproductive surgery in gynecology 1st ed* London: Informa Healthcare p. 2010:281-5.
 77. Daniell JF, Pittaway DE, Maxson WS. The role of laparoscopic adhesiolysis in an in vitro fertilization program. *Fertil Steril.* 1983;40(1) :49-52. Epub 1983/07/01. doi: 10. 1016/s0015-0282(16) 47176-1. PubMed PMID: 6222921.
 78. Alborzi S, Motazedian S, Parsanezhad ME. Chance of adhesion formation after laparoscopic salpingo-ovariolysis: is there a place for second-look laparoscopy? *J Am Assoc Gynecol Laparosc.* 2003;10(2) :172-6. Epub 2003/05/07. doi: 10. 1016/s1074-3804(05) 60294-0. PubMed PMID: 12732767.
 79. Cheong Y, Bailey S, Forbes J. Randomized Controlled Trial of Hyalobarrier(*) Versus No Hyalobarrier(*) on the Ovulatory Status of Women with Periovarian Adhesions: A Pilot Study. *Adv Ther.* 2017;34(1) :199-206. Epub 2016/12/03. doi: 10. 1007/s12325-016-0453-z. PubMed PMID: 27900662; PubMed Central PMCID: PMC5216085.
 80. Duffy JM, Johnson N, Ahmad G, Watson A. Postoperative procedures for improving fertility following pelvic reproductive surgery. *Cochrane Database Syst Rev.* 2009;2009(2) :Cd001897. Epub 2009/04/17. doi: 10. 1002/14651858. CD001897. pub2. PubMed PMID: 19370571; PubMed Central PMCID: PMC5216085.
 81. Yoshino O, Hayashi T, Osuga Y, Orisaka M, Asada H, Okuda S, et al. Decreased pregnancy rate is linked to abnormal uterine peristalsis caused by intramural fibroids. *Hum Reprod.* 2010;25(10): 2475-9. Epub 2010/08/20. doi: 10. 1093/humrep/deq222. PubMed PMID: 20719814.
 82. Coronado GD, Marshall LM, Schwartz SM. Complications in pregnancy, labor, and delivery with uterine leiomyomas: a population-based study. *Obstet Gynecol.* 2000;95(5) :764-9. Epub 2000/04/25. doi: 10. 1016/s0029-7844(99) 00605-5. PubMed PMID: 10775744.
 83. Farquhar C. Do uterine fibroids cause infertility and should they be removed to increase fertility? *Bmj.* 2009;338:b126. Epub 2009/01/20. doi: 10. 1136/bmj. b126. PubMed PMID: 19151067.
 84. Kroon B, Johnson N, Chapman M, Yazdani A, Hart R. Fibroids in infertility--consensus statement from ACCEPT (Australasian CREI Consensus Expert Panel on Trial evidence). *Aust N Z J Obstet Gynaecol.* 2011;51(4) :289-95. Epub 2011/08/03. doi: 10. 1111/j. 1479-828X. 2011. 01300. x. PubMed PMID: 21806566.
 85. Somigliana E, Vercellini P, Daguati R, Pasin R, De Giorgi O, Crosignani PG. Fibroids and female reproduction: a critical analysis of the evidence. *Hum Reprod Update.* 2007;13(5) :465-76. Epub 2007/06/23. doi: 10. 1093/humupd/dmm013. PubMed PMID: 17584819.
 86. Yan L, Ding L, Li C, Wang Y, Tang R, Chen ZJ. Effect of fibroids not distorting the endometrial cavity on the outcome of in vitro fertilization treatment: a retrospective cohort study. *Fertil*

- Steril. 2014;101(3) :716-21. Epub 2014/01/16. doi: 10.1016/j.fertnstert.2013.11.023. PubMed PMID: 24424367.
87. Christopoulos G, Vlismas A, Salim R, Islam R, Trew G, Lavery S. Fibroids that do not distort the uterine cavity and IVF success rates: an observational study using extensive matching criteria. *Bjog*. 2017;124(4) :615-21. Epub 2016/12/07. doi: 10.1111/1471-0528.14362. PubMed PMID: 27921379.
 88. Seshadri S, El-Toukhy T, Douiri A, Jayaprakasan K, Khalaf Y. Diagnostic accuracy of saline infusion sonography in the evaluation of uterine cavity abnormalities prior to assisted reproductive techniques: a systematic review and meta-analyses. *Hum Reprod Update*. 2015;21(2) :262-74. Epub 2014/12/17. doi: 10.1093/humupd/dmu057. PubMed PMID: 25505226.
 89. Pier BD, Bates GW. Potential causes of subfertility in patients with intramural fibroids. *Fertil Res Pract*. 2015;1:12. Epub 2015/08/25. doi: 10.1186/s40738-015-0005-2. PubMed PMID: 28620517; PubMed Central PMCID: PMC45424315.
 90. Ciavattini A, Di Giuseppe J, Stortoni P, Montik N, Giannubilo SR, Litta P, et al. Uterine fibroids: pathogenesis and interactions with endometrium and endomyometrial junction. *Obstet Gynecol Int*. 2013;2013:173184. Epub 2013/10/29. doi: 10.1155/2013/173184. PubMed PMID: 24163697; PubMed Central PMCID: PMC3791844.
 91. Kitaya K, Yasuo T. Leukocyte density and composition in human cycling endometrium with uterine fibroids. *Hum Immunol*. 2010;71(2) :158-63. Epub 2009/12/08. doi: 10.1016/j.humimm.2009.11.014. PubMed PMID: 19961890.
 92. Yoshino O, Nishii O, Osuga Y, Asada H, Okuda S, Orisaka M, et al. Myomectomy decreases abnormal uterine peristalsis and increases pregnancy rate. *J Minim Invasive Gynecol*. 2012;19(1) :63-7. Epub 2011/11/11. doi: 10.1016/j.jmig.2011.09.010. PubMed PMID: 22070929.
 93. Pakrashi T. New hysteroscopic techniques for submucosal uterine fibroids. *Curr Opin Obstet Gynecol*. 2014;26(4) :308-13. Epub 2014/06/21. doi: 10.1097/gco.0000000000000076. PubMed PMID: 24950124.
 94. Dubuisso JB, Fauconnier A, Babaki-Fard K, Chapron C. Laparoscopic myomectomy: a current view. *Hum Reprod Update*. 2000;6(6) :588-94. Epub 2000/12/29. doi: 10.1093/humupd/6.6.588. PubMed PMID: 11129692.
 95. Hall T, Lee SI, Boruta DM, Goodman A. Medical Device Safety and Surgical Dissemination of Unrecognized Uterine Malignancy: Morcellation in Minimally Invasive Gynecologic Surgery. *Oncologist*. 2015;20(11) :1274-82. Epub 2015/09/19. doi: 10.1634/theoncologist.2015-0061. PubMed PMID: 26382742; PubMed Central PMCID: PMC4718440.
 96. Metwally M, Raybould G, Cheong YC, Horne AW. Surgical treatment of fibroids for subfertility. *Cochrane Database Syst Rev*. 2020;1(1) :Cd003857. Epub 2020/01/30. doi: 10.1002/14651858.CD003857.pub4. PubMed PMID: 31995657; PubMed Central PMCID: PMC6989141 from the MRC, NIHR, CSO, Wellbeing of Women, Roche Diagnostics, Astra Zeneca and Ferring, and is Chair of RCOG Academic Board, ESHRE National Representative for the UK, WES Ambassador, SEUD Board Member, Past Chair of ESHRE Special Interest Group Endometriosis, Member of NICE and ESHRE Endometriosis Guideline Groups, Trustee and Medical Advisor to Endometriosis UK, Medical Advisor to Pelvic Pain Support Network, and Deputy Editor in chief of Human Reproduction Open. AH's institution has received consultancy fees from Roche Diagnostics, AbbVie, Nordic Pharma and Ferring for work carried out on their behalf.
 97. Afolabi MA, Ezeoke GG, Saidu R, Ijaiya MA, Adeniran AS. Comparing perioperative vaginal misoprostol with intraoperative pericervical hemostatic tourniquet in reducing blood loss during abdominal myomectomy: A randomized controlled trial. *J Turk Ger Gynecol Assoc*. 2019;20(1) :23-30. Epub 2018/12/01. doi: 10.4274/jtgga.galenos.2018.0049. PubMed PMID: 30499282; PubMed Central PMCID: PMC6501861.
 98. Tanos V, Berry KE, Frist M, Campo R, DeWilde RL. Prevention and Management of Complications in Laparoscopic Myomectomy. *Biomed Res Int*. 2018;2018:8250952. Epub 2018/04/26. doi: 10.1155/2018/8250952. PubMed PMID: 29693017; PubMed Central PMCID: PMC5859837.
 99. Donnez J, Dolmans MM. Uterine fibroid management: from the present to the future. *Hum Reprod Update*. 2016;22(6) :665-86. Epub 2016/07/29. doi: 10.1093/humupd/dmw023.

- PubMed PMID: 27466209; PubMed Central PMCID: PMCPMC5853598.
100. Mettler L, Schollmeyer T, Tinelli A, Malvasi A, Alkatout I. Complications of Uterine Fibroids and Their Management, Surgical Management of Fibroids, Laparoscopy and Hysteroscopy versus Hysterectomy, Haemorrhage, Adhesions, and Complications. *Obstet Gynecol Int.* 2012;2012:791248. Epub 2012/05/24. doi: 10.1155/2012/791248. PubMed PMID: 22619681; PubMed Central PMCID: PMCPMC3348525.
 101. Tinelli A, Favilli A, Lasmar RB, Mazzon I, Gerli S, Xue X, et al. The importance of pseudocapsule preservation during hysteroscopic myomectomy. *Eur J Obstet Gynecol Reprod Biol.* 2019;243:179-84. Epub 2019/10/06. doi: 10.1016/j.ejogrb.2019.09.008. PubMed PMID: 31585677.
 102. Litta P, Leggieri C, Conte L, Dalla Toffola A, Multinu F, Angioni S. Monopolar versus bipolar device: safety, feasibility, limits and perioperative complications in performing hysteroscopic myomectomy. *Clin Exp Obstet Gynecol.* 2014;41(3): 335-8. Epub 2014/07/06. PubMed PMID: 24992788.
 103. Messinis IE. Ovulation induction: a mini review. *Hum Reprod.* 2005;20(10):2688-97. Epub 2005/07/12. doi: 10.1093/humrep/dei128. PubMed PMID: 16006478.
 104. Gomel V, Yarali H. Surgical treatment of polycystic ovary syndrome associated with infertility. *Reprod Biomed Online.* 2004;9(1):35-42. Epub 2004/07/20. doi: 10.1016/s1472-6483(10)62107-4. PubMed PMID: 15257815.
 105. Teede HJ, Misso ML, Costello MF, Dokras A, Laven J, Moran L, et al. Recommendations from the international evidence-based guideline for the assessment and management of polycystic ovary syndrome. *Fertility and Sterility.* 2018;110(3): 364-79. doi: https://doi.org/10.1016/j.fertnstert.2018.05.004.
 106. Guzick DS, Carson SA, Coutifaris C, Overstreet JW, Factor-Litvak P, Steinkampf MP, et al. Efficacy of superovulation and intrauterine insemination in the treatment of infertility. National Cooperative Reproductive Medicine Network. *N Engl J Med.* 1999;340(3):177-83. Epub 1999/01/23. doi: 10.1056/nejm199901213400302. PubMed PMID: 9895397.
 107. Stein IF. Amenorrhea associated with bilateral polycystic ovaries. *Am J Obstet Gynecol.* 1935;29:181-91.
 108. Consensus on infertility treatment related to polycystic ovary syndrome. *Hum Reprod.* 2008;23(3):462-77. Epub 2008/03/01. doi: 10.1093/humrep/dem426. PubMed PMID: 18308833.
 109. Gjönnaess H. Polycystic ovarian syndrome treated by ovarian electrocautery through the laparoscope. *Fertility and Sterility.* 1984;41(1):20-5. doi: https://doi.org/10.1016/S0015-0282(16)47534-5.
 110. Flyckt RL, Goldberg JM. Laparoscopic ovarian drilling for clomiphene-resistant polycystic ovary syndrome. *Semin Reprod Med.* 2011;29(2):138-46. Epub 2011/03/26. doi: 10.1055/s-0031-1272476. PubMed PMID: 21437828.
 111. Campo S. Ovulatory cycles, pregnancy outcome and complications after surgical treatment of polycystic ovary syndrome. *Obstet Gynecol Surv.* 1998;53(5):297-308. Epub 1998/05/20. doi: 10.1097/00006254-199805000-00022. PubMed PMID: 9589438.
 112. Wu R, Fujii S, Ryan NK, Van der Hoek KH, Jasper MJ, Sini I, et al. Ovarian leukocyte distribution and cytokine/chemokine mRNA expression in follicular fluid cells in women with polycystic ovary syndrome. *Hum Reprod.* 2007;22(2):527-35. Epub 2006/09/26. doi: 10.1093/humrep/del371. PubMed PMID: 16997933.
 113. El Behery MM, Diab AE, Mowafy H, Ebrahiem MA, Shehata AE. Effect of laparoscopic ovarian drilling on vascular endothelial growth factor and ovarian stromal blood flow using 3-dimensional power Doppler. *Int J Gynaecol Obstet.* 2011;112(2):119-21. Epub 2010/12/15. doi: 10.1016/j.ijgo.2010.08.018. PubMed PMID: 21144516.
 114. Amer SA, Li TC, Cooke ID. A prospective dose-finding study of the amount of thermal energy required for laparoscopic ovarian diathermy. *Hum Reprod.* 2003;18(8):1693-8. Epub 2003/07/23. doi: 10.1093/humrep/deg307. PubMed PMID: 12871884.
 115. Farquhar CM, Williamson K, Gudex G, Johnson NP, Garland J, Sadler L. A randomized controlled trial of laparoscopic ovarian diathermy versus gonadotropin therapy for women with clomiphene citrate-resistant polycystic ovary syndrome. *Fertil Steril.* 2002;78(2):404-11. Epub 2002/07/26. doi: 10.1016/s0015-0282(02)03225-9. PubMed PMID: 12137881.
 116. Abu Hashim H, Foda O, El Rakhawy M. Unilateral or bilateral laparoscopic ovarian drilling in polycystic ovary syndrome: a meta-analy-

- sis of randomized trials. *Arch Gynecol Obstet.* 2018;297(4): 859-70. Epub 2018/01/29. doi: 10. 1007/s00404-018-4680-1. PubMed PMID: 29374790.
117. Bordewijk EM, Ng KYB, Rakic L, Mol BWJ, Brown J, Crawford TJ, et al. Laparoscopic ovarian drilling for ovulation induction in women with anovulatory polycystic ovary syndrome. *Cochrane Database Syst Rev.* 2020;2(2) :Cd001122. Epub 2020/02/13. doi: 10. 1002/14651858. CD001122. pub5. PubMed PMID: 32048270; PubMed Central PMCID: PMC7013239 known Ben Willem Mol reports grants from NHMRC, personal fees from ObsEva, personal fees from Merck Merck KGaA, personal fees from Guerbet, personal fees from iGenomix, outside the submitted work. Julie Brown: none known Tineke Crawford: none known Madelon van Wely: none known.
 118. Bayram N, van Wely M, Kaaijk EM, Bossuyt PM, van der Veen F. Using an electrocautery strategy or recombinant follicle stimulating hormone to induce ovulation in polycystic ovary syndrome: randomised controlled trial. *Bmj.* 2004;328(7433) :192. Epub 2004/01/24. doi: 10. 1136/bmj. 328. 7433. 192. PubMed PMID: 14739186; PubMed Central PMCID: PMC318481.
 119. Youssef H, Atallah MM. Unilateral ovarian drilling in polycystic ovarian syndrome: a prospective randomized study. *Reprod Biomed Online.* 2007;15(4) :457-62. Epub 2007/10/03. doi: 10. 1016/s1472-6483(10) 60373-2. PubMed PMID: 17908411.
 120. Debras E, Fernandez H, Neveu ME, Deffieux X, Capmas P. Ovarian drilling in polycystic ovary syndrome: Long term pregnancy rate. *Eur J Obstet Gynecol Reprod Biol X.* 2019;4:100093. Epub 2019/09/10. doi: 10. 1016/j. eurox. 2019. 100093. PubMed PMID: 31497757; PubMed Central PMCID: PMC6722221.
 121. Mercorio F, Mercorio A, Di Spiezio Sardo A, Vincenzo Barba G, Pellicano M, Nappi C. Evaluation of ovarian adhesion formation after laparoscopic ovarian drilling by second-look minilaparoscopy. *Fertil Steril.* 2008;89(5) :1229-33. Epub 2007/08/08. doi: 10. 1016/j. fertnstert. 2007. 05. 009. PubMed PMID: 17681339.
 122. Api M. Is ovarian reserve diminished after laparoscopic ovarian drilling? *Gynecol Endocrinol.* 2009;25(3) :159-65. Epub 2009/04/07. doi: 10. 1080/09513590802585605. PubMed PMID: 19347705.
 123. Amer SA, Shamy TTE, James C, Yosef AH, Mohamed AA. The impact of laparoscopic ovarian drilling on AMH and ovarian reserve: a meta-analysis. *Reproduction.* 2017;154(1) :R13-r21. Epub 2017/04/20. doi: 10. 1530/rep-17-0063. PubMed PMID: 28420801.
 124. Farquhar C, Lilford RJ, Marjoribanks J, Vandeckerckhove P. Laparoscopic 'drilling' by diathermy or laser for ovulation induction in anovulatory polycystic ovary syndrome. *Cochrane Database Syst Rev.* 2007(3) :Cd001122. Epub 2007/07/20. doi: 10. 1002/14651858. CD001122. pub3. PubMed PMID: 17636653.
 125. Hager M, Wenzl R, Riesenhuber S, Marschalek J, Kuessel L, Mayrhofer D, et al. The Prevalence of Incidental Endometriosis in Women Undergoing Laparoscopic Ovarian Drilling for Clomiphene-Resistant Polycystic Ovary Syndrome: A Retrospective Cohort Study and Meta-Analysis. *J Clin Med.* 2019;8(8). Epub 2019/08/17. doi: 10. 3390/jcm8081210. PubMed PMID: 31416144; PubMed Central PMCID: PMC6722764.