# endometriosis and adenomyosis society

ENDOMETRIOSIS & ADENOMYOSIS SOCIETY, TURKIYE 2009 15

2023 issue : 27



### radiological imaging methods in endometriosis and adenomiosis



INTERVIEW WITH AN ENDO-SPECIALIST PROF. ERTAN SARIDOĞAN MD



### PREFACE

Dear Colleagues,

We are together with the 27th issue of the Endometriosis and Adenomyosis Society, Turkiye's bulletin. When we celebrate the 100th year of our Republic, we remember with respect and gratitude Mustafa Kemal Atatürk, the founder of our Republic, who enabled our country to reach these days with his reforms in education and science.

The topic of this issue is "RADIOLOGICAL IMAGING METHODS IN ENDOMETRIOSIS AND ADENOMYOSIS." Imaging methods are essential in diagnosing endometriosis and adenomyosis and planning treatment. In recent years, ultrasonography has become very prominent, especially in diagnosing deep endometriosis nodules and adenomyosis. In this bulletin,



we have included extensive summaries of 6 articles on MRI and ultrasonography.

In our bulletin, you can find articles from our country on endometriosis and adenomyosis in the third quarter of 2023. In this issue, in the EndoExpert interview, Prof. Ertan Sarıdoğan. MD who mainly works in endometriosis and infertility in the UK and is actively involved in ESGE, ESGEVISION, and ESHRE discussed with Assoc. Prof. Nilüfer Akgün, MD how doctors should evaluate education and career opportunities abroad.

In this issue, we also present information about our society's scientific and social activities and relations with international associations. On July 27, 2023, Işıl Ayhan, MD presented "Introduction to Clinical Research" at the Endoarticle hour. Prof. Ahmet Kale, MD gave an online lecture titled "Surgery Skills" on August 29, 2023.

As a part of the Endo-young education days, on September 14, "The Relationship Between Appendix and Endometriosis" was presented by Assoc. Prof. Fatma Ketenci Gençer, MD moderated by Prof. Emre Papuçcu, MD and on September 28, "Endometriosis-Related Infertility" was discussed by Seher Sarı Kayarlı, MD under the moderation of Prof. Emre Papuççu, MD and Assoc. Prof. Aytaç Tohma, MD with the participation of the entire young team.

This summer our society's young group implemented a social media sharing program with a new format of texts and video presentations. Since July, we have been adapting our new format and sharing our knowledge on endometriosis with our followers.

For the past couple of years our society has been conducting "Endometriosis Awareness and Menstrual Health" seminars in the girls' dormitories and high schools of Turkish Youth and Sports Ministry. Programs for the 2023-2024 academic year have been prepared, and meetings have started in October, with seminars given so far in three schools, one orphanage, and a dormitory.

On September 3, 2023, we held our 16th EndoAcademy meeting in Denizli. The course "Endometriosis; From Diagnosis to Management" was chaired by Prof. Erkan Alataş, MD and Prof. Koray Elter, MD. The meeting was held at Denizli University, with support from faculty members of surrounding universities. Many participants from the region attended our session. The meeting thoroughly evaluated all aspects of endometriosis diagnosis and treatment. Prof. Ahmet Kale, MD also made a video presentation on "Ultrasonography in Endometriosis." The panel discussing cases at the end of the meeting was exciting and conducted interactively.

On September 24, 2023, our society was in Ankara. A symposium titled "Multidisciplinary Approach to Endometriosis and Adenomyosis" was held at the Atılım University campus. It was a great meeting where embryologists, immunologists, pelvic floor physiotherapists, general surgeons, pathologists, gynecological oncologists, and clinician gynecologists gathered to discuss endometriosis and adenomyosis. Tamer Seçkin,MD from the USA joined our online meeting and gave a keynote lecture. Prof. Ayşe Ayhan, MD from Japan joined the meeting

#### page 2

online and shared new developments in endometriosis pathology. As always, it was a highly informative and beneficial meeting.

Preparations for our "Endometriosis and Adenomyosis: Bench to Bedside" meeting, planned with Oxford and Edinburgh Universities on February 2-3, 2024, in Istanbul, have been completed, and we are eagerly awaiting the session. We would be delighted to see you in Istanbul. We also await your abstract submissions for the meeting. Abstract submissions have started, and following the evaluation, awards will be given to the best abstracts in laboratory and clinical categories.

We wish you enjoyable reading.

On behalf of the Endometriosis and Adenomyosis Society, Turkiye Board of Directors

Editor

Prof. Dr. Turgut Var

page 3





Prof. Dr. Ümit İnceboz President



Prof. Dr. Ahmet Kale 2. President



Prof. Dr. Koray Elter Secretary General



Assoc. Dr. Yusuf Aytaç Tohma Treasurer



Prof. Dr. Taner Usta Board Member



Prof. Dr. Turgut Var Board Member



Prof. Dr. Engin Oral Founding President / Board Member



2022-2025 Endometriosis and Adenomyosis Society Board of Directors

## TABLE OF CONTENTS

- SELECTED ARTICLES
- ARTICLES ON ENDOMETRIOSIS FROM TURKIYE FROM THE LAST THREE MONTHS
- NEWS FROM OUR SOCIETY
- NEWS FROM THE WORLD OF ENDOMETRIOSIS
- INTERVIEW WITH AN ENDO SPECIALIST

# preparation committee



PROF. TURGUT VAR MD EDITOR



ASSOC. PROF. MD TOLGA KARACAN

MD KAROLIN OHANOGLU





MD ALIYE ERDOGAN



MD AVSEGUL BESTEL

MD BERIVAN GÜZELBAĞ



MD NİLÜFER CİMŞİT



ASSOC. PROF. MD FATMA KETENCI GENCER

# translated from Turkish by

- NURA FİTNAT TOPBAŞ SELÇUKİ, MD
- EZGİ DARICI, MD
- KAROLİN OHANOĞLU, MD
- IŞIK SÖZEN, MD
- FIRAT BÜYÜKTAŞKIN, MD
- MURAT BAŞAR, MD

### **SELECTED ARTICLES**

Strengths and limitations of diagnostic tools for endometriosis and relevance in diagnostic test accuracy research

E Pascoal, J M Wessels, M K Aas-Eng, M S Abrao, G Condous , D Jurkovic, M Espada, C

Exacoustos, S Ferrero, S Guerriero, G Hudelist , M Malzoni, S Reid, S Tang, C Tomassetti, S S Singh, T Van den Bosch, M Leonardi. Review Ultrasound Obstet

Gynecol. 2022 Sep;60(3):309-327. doi: 10.1002/uog.24892.

Endometriosis: A multimodal imaging review

Juan Quesada, Kirsi Härmä, Shannon Reid, Tanushree Rao, Glen Lo, Natalie Yang, Sonal Karia, Emmeline Lee, Nira Borok. Review Eur J Radiol. 2023 Jan:158:110610. doi: 10.1016/j.ejrad.2022.110610. Epub 2022

Ultrasound Elastography for the Diagnosis of Endometriosis and Adenomyosis: A Systematic Review with Meta-analysis

Ana Claudia Brunelli, Luiz Gustavo Oliveira Brito, Flavia Assad Salum Moro, Rodrigo Menezes Jales, Daniela Angerame Yela, Cristina Laguna Benetti-Pinto. Review Ultrasound Med Biol. 2023 Mar;49(3):699-709. doi:10.1016/j.ultrasmedbio.2022.11.006. Epub 2022 Dec 15.

Expert opinion on the use of transvaginal sonography for presurgical staging and classification of endometriosis

J Keckstein, M Hoopmann, E Merz, D Grab, J Weichert, S Helmy-Bader, M Wölfler, M Bajka, S Mechsner, S Schäfer, H Krentel, G Hudelist. Review Arch Gynecol Obstet. 2023 Jan;307(1):5-19. doi: 10.1007/s00404-022-06766-z. Epub 2022 Nov 11.

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

Guerriero S, Condous G, van den Bosch T, Valentin L, Leone FP, Van Schoubroeck D,

Exacoustos C, Installé AJ, Martins WP, Abrao MS, Hudelist G, Bazot M, Alcazar JL, Gonçalves MO, Pascual MA, Ajossa S, Savelli L, Dunham R, Reid S, Menakaya U, Bourne T, Ferrero S, Leon M, Bignardi T, Holland T, Jurkovic D, Benacerraf B, Osuga Y, Somigliana E, Timmerman D. Ultrasound Obstet Gynecol. 2016 Sep;48(3):318-32. doi: 10.1002/uog.15955. Epub 2016 Jun 28. PMID: 27349699.

Consensus on revised definitions of Morphological Uterus Sonographic Assessment (MUSA) features of adenomyosis: results of modified Delphi procedure

Harmsen MJ, Van den Bosch T, de Leeuw RA, Dueholm M, Exacoustos C, Valentin L, Hehenkamp WJK, Groenman F, De Bruyn C, Rasmussen C, Lazzeri L, Jokubkiene L, Jurkovic D, Naftalin J, Tellum T, Bourne T, Timmerman D, Huirne JAF. Ultrasound Obstet Gynecol. 2022 Jul;60(1):118-131. doi:10.1002/uog.24786. PMID: 34587658

## Strengths and limitations of diagnostic tools for endometriosis and relevance in diagnostic test accuracy research

E Pascoal, J M Wessels, M K Aas-Eng, M S Abrao, G Condous , D Jurkovic, M Espada, C Exacoustos, S Ferrero, S Guerriero, G Hudelist , M Malzoni, S Reid, S Tang, C Tomassetti, S S Singh, T Van den Bosch, M Leonardi.

Abstract: Endometriosis is a chronic systemic disease that can cause pain, infertility and reduced quality of life. Diagnosing endometriosis remains challenging, which yields diagnostic delays for patients. Research on diagnostic test accuracy in endometriosis can be difficult due to verification bias, as not all patients with endometriosis undergo definitive diagnostic testing. The purpose of this State-of-the-Art Review is to provide a comprehensive update on the strengths and limitations of the diagnostic modalities used in endometriosis and discuss the relevance of diagnostic test accuracy research pertaining to each. We performed a comprehensive literature review of the following methods: clinical assessment including

history and physical examination, biomarkers, diagnostic imaging, surgical diagnosis and histopathology. Our review suggests that, although non-invasive diagnostic methods, such as clinical assessment, ultrasound and magnetic resonance imaging, do not yet qualify formally as replacement tests for surgery in diagnosing all subtypes of endometriosis, they are likely to be appropriate for advanced stages of endometriosis. We also demonstrate in our review that all methods have strengths and limitations, leading to our conclusion that there should not be a single gold-standard diagnostic method for endometriosis, but rather, multiple accepted diagnostic methods appropriate for different circumstances. © 2022 International Society of Ultrasound in Obstetrics and Gynecology.

#### Endometriosis: A multimodal imaging review

Juan Quesada, Kirsi Härmä, Shannon Reid, Tanushree Rao, Glen Lo, Natalie Yang, Sonal Karia, Emmeline Lee, Nira Borok.

Abstract: Endometriosis is a chronic inflammatory disorder characterized endometrial-like tissue present outside of the uterus, affecting approximately 10% of reproductive age women. It is associated with abdomino-pelvic pain, infertility and other non - gynecologic symptoms, making it a challenging diagnosis. Several guidelines have been developed by different international societies to diagnose and classify endometriosis, yet areas of controversy and uncertainty remains. Transvaginal ultrasound (TV-US) is the first-line imaging modality used to identify endometriosis due to its accessibility and cost-efficacy. Enhanced sonographic techniques are emerging as a dedicated technique to evaluate deep infiltrating endometriosis (DIE), depending on the expertise of the sonographer as well as the location of the lesions. MRI is an ideal complementary modality to ultrasonography for pre-operative planning as it allows for a larger field-of-view when required and it has high levels of reproducibility and tolerability. Typically, endometriotic lesions appear hypoechoic on ultrasonography. On MRI, classical features include DIE T2 hypointensity, endometrioma T2 hypointensity and T1 hyperintensity, while superficial peritoneal endometriosis (SPE) is described as a small focus of T1 hyperintensity. Imaging has become a critical tool in the diagnosis, surveillance and surgical planning of endometriosis. This literature review is based mostly on studies from the last two decades and aims to provide a detailed overview of the imaging features of endometriosis as well as the advances and usefulness of different imaging modalities for this condition.

Keywords: Deep infiltrating endometriosis; Endometrioma; Endometriosis; Endometriosis imaging features, superficial peritoneal endometriosis; Rectosigmoid endometriosis.



## Ultrasound Elastography for the Diagnosis of Endometriosis and Adenomyosis: A Systematic Review with Meta-analysis

Ana Claudia Brunelli, Luiz Gustavo Oliveira Brito, Flavia Assad Salum Moro, Rodrigo Menezes Jales, Daniela Angerame Yela, Cristina Laguna Benetti-Pinto.

Abstract: Elastography is capable of measuring tissue mechanical properties and elasticity. It is used to help diagnose various diseases, although its use in pelvic endometriosis remains to be established. A systematic review and meta-analysis were conducted to assess transvaginal ultrasound elastography for the diagnosis of different manifestations of endometriosis and adenomyosis. PRISMA guidelines were used for a Medline, PubMed, Embase, BVS/Bireme, Scopus, Cochrane Library and Escudos database search. Studies indexed until March 2021 that evaluated elastography compared with histopathological results (gold standard), ultrasound or magnetic resonance imaging for diagnosis of pelvic endometriosis and adenomyosis were eligible. The Rayyan platform was used to select studies. Sensitivity (S), specificity (Ps), positive and negative predictive values and receiver operating characteristic curves were calculated for elastographic diagnosis of endometriosis. A meta-analysis using Review Manager 5 and Open Meta Analyst was performed. Bias risk in the studies was analyzed using the Quality Assessment of Diagnostic Accuracy Studies (QUADAS)-2 tool. This systematic review was prospectively registered in the PROSPERO database: CRD42021244555. Among the 163 identified citations, 10 studies were eligible for review (5 for diagnosis of adenomyosis, 2 for endometrioma, 3 for deep intestinal endometriosis and rectovaginal septum [deep pelvic endometriosis], N = 744 women). In deep pelvic endometriosis, lesions diagnosed by elastography were found to correlate with histopathology results. Increased "stiffness" (elastography) was associated with a higher fibrotic component, with S = 78%-100% and Ps = 100%, according to the authors. On elastography, endometriomas were stiffer than hemorrhagic cysts (S = 82%, Ps = 79%) and malignant tumors (S = 86%, Ps = 100%). For these lesions, a meta-analysis could not be performed because the small number of studies and insufficient data. In adenomyosis, meta-analysis and receiver operating characteristic curve analysis revealed that elastography had good sensitivity and specificity. Studies indicated a low bias risk by QUADAS-2. Elastography had high sensitivity and specificity for deep pelvic endometriosis diagnosis, and its findings correlated with histopathology results. For adenomyosis, the meta-analysis confirmed the sensitivity and specificity results of the studies. Given these results, elastography may be a promising imaging test, contributing to non-invasive diagnosis of endometriosis and adenomyosis.

Keywords: Accuracy; Adenomyosis; Endometrioma; Endometriosis; Shear wave elastography; Strain elastography; Systematic review; Ultrasound.

## Expert opinion on the use of transvaginal sonography for presurgical staging and classification of endometriosis

J Keckstein, M Hoopmann, E Merz, D Grab, J Weichert, S Helmy-Bader, M Wölfler, M Bajka, S Mechsner, S Schäfer, H Krentel, G Hudelist.

Abstract: Gynecological ultrasonography plays a central role in the management of endometriosis. The rapid technical development as well as the currently increasing evidence for non-invasive diagnostic methods require an updated compilation of recommendations for the use of ultrasound in the management of endometriosis. The present work aims to highlight the accuracy of sonography for diagnosing and classifying endometriosis and will formulate the present list of key messages and recommendations. This paper aims to demonstrate the accuracy of TVS in the diagnosis and classification of endometriosis and to discuss the clinical applications and consequences of TVS findings for indication, surgical planning and assessment of associated risk factors. Sophisticated ultrasound is the primary imaging modality recommended for suspected endometriosis. The examination procedure should be performed according to the IDEA Consensus. Surgical intervention to confirm the diagnosis alone is not recommended. A preoperative imaging procedure with TVS and/or MRI is strongly recommended. Ultrasound examination does not allow the definitive exclusion of endometriosis. The examination is

page 9

primarily transvaginal and should always be combined with a speculum and a bimanual examination. Additional transabdominal ultrasonography may enhance the accuracy of the examination in case of extra pelvic disease, extensive findings or limited transvaginal access. (Sonographic assessment of both kidneys is mandatory when deep endometriosis (DE) and endometrioma are suspected. Endometriomas are well defined by sonographic criteria. When evaluating the ovaries, the use of IOTA criteria is recommended. The description of sonographic findings of deep endometriosis should be systematically recorded and performed using IDEA terminology. Adenomyosis uteri has sonographically well-defined criteria (MUSA) that allow for detection with high sensitivity and specificity. MRI is not superior to differentiated skilled ultrasonography. Classification of the extent of findings should be done according to the #Enzian classification. The current data situation proves the best possible prediction of the intraoperative situs of endometriosis (exclusive peritoneum) for the non-invasive application of the #Enzian classification. Transvaginal sonographic examination by an experienced examiner is not inferior to MRI diagnostics regarding sensitivity and specificity in the prediction of the extent of deep endometriosis. The major advantage of non-invasive imaging and classification of endometriosis is the differentiated planning or possible avoidance of surgical interventions. The recommendations represent the opinion of experts in the field of non-invasive and invasive diagnostics as well as therapy of endometriosis. They were developed with the participation of the following national and international societies: DEGUM, ÖGUM, SGUM, SEF, AGEM/DGGG, and EEL.

Keywords: #Enzian classification; Diagnostics; Endometriosis; Recommendation; Ultrasound.

#### 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

Guerriero S, Condous G, van den Bosch T, Valentin L, Leone FP, Van Schoubroeck D, Exacoustos C, Installé AJ, Martins WP, Abrao MS, Hudelist G, Bazot M, Alcazar JL, Gonçalves MO, Pascual MA, Ajossa S, Savelli L, Dunham R, Reid S, Menakaya U, Bourne T, Ferrero S, Leon M, Bignardi T, Holland T, Jurkovic D, Benacerraf B, Osuga Y, Somigliana E, Timmerman D.

Abstract: The IDEA (International Deep Endometriosis Analysis group) statement is a consensus opinion on terms, definitions and measurements that may be used to describe the sonographic features of the different phenotypes of endometriosis. Currently, it is difficult to compare results between published studies because authors use different terms when describing the same structures and anatomical locations. We hope that the terms and definitions suggested herein will be adopted in centers around the world. This would result in consistent use of nomenclature when describing the ultrasound location and extent of endometriosis. We believe that the standardization of terminology will allow meaningful comparisons between future studies in women with an ultrasound diagnosis of endometriosis and should facilitate multicenter research. Copyright © 2016 ISUOG. Published by John Wiley & Sons Ltd.

Keywords: anterior and posterior compartments; deep infiltrating endometriosis; endometrioma; laparoscopy; ultrasound.

## Consensus on revised definitions of Morphological Uterus Sonographic Assessment (MUSA) features of adenomyosis: results of modified Delphi procedure

Harmsen MJ, Van den Bosch T, de Leeuw RA, Dueholm M, Exacoustos C, Valentin L, Hehenkamp WJK, Groenman F, De Bruyn C, Rasmussen C, Lazzeri L, Jokubkiene L, Jurkovic D, Naftalin J, Tellum T, Bourne T, Timmerman D, Huirne JAF.

#### Abstract

Objectives: To evaluate whether the Morphological Uterus Sonographic Assessment (MUSA) features of adenomyosis need to be better defined and, if deemed necessary, to reach consensus on the updated definitions.

Methods: A modified Delphi procedure was performed among European gynecologists with expertise in ultrasound diagnosis of adenomyosis. To identify MUSA features that might need revision, 15 twodimensional (2D) video recordings (four recordings also included three-dimensional (3D) still images) of transvaginal ultrasound (TVS) examinations of the uterus were presented in the first Delphi round (online questionnaire). Experts were asked to confirm or refute the presence of each of the nine MUSA features of adenomyosis (described in the original MUSA consensus statement) in each of the 15 videoclips and to provide comments. In the second Delphi round (online questionnaire), the results of the first round and suggestions for revision of MUSA features were shared with the experts before they were asked to assess a new set of 2D and 3D still images of TVS examinations and to provide feedback on the proposed revisions. A third Delphi round (virtual group meeting) was conducted to discuss and reach final consensus on revised definitions of MUSA features. Consensus was predefined as at least 66.7% agreement between experts.

Results: Of 18 invited experts, 16 agreed to participate in the Delphi procedure. Eleven experts completed and four experts partly finished the first round. The experts identified a need for more detailed definitions of some MUSA features. They recommended use of 3D ultrasound to optimize visualization of the junctional zone. Fifteen experts participated in the second round and reached consensus on the presence or absence of ultrasound features of adenomyosis in most of the still images. Consensus was reached for all revised definitions except those for subendometrial lines and buds and interrupted junctional zone. Thirteen experts joined the online meeting, in which they discussed and agreed on final revisions of the MUSA definitions. There was consensus on the need to distinguish between direct features of adenomyosis, i.e. features indicating presence of ectopic endometrial tissue in the myometrium, and indirect features, i.e. features reflecting changes in the myometrium secondary to presence of endometrial lines and buds were classified unanimously as direct features of adenomyosis. Globular uterus, asymmetrical myometrial thickening, fan-shaped shadowing, translesional vascularity, irregular junctional zone and interrupted junctional zone were classified as indirect features of adenomyosis.

Conclusion: Consensus between gynecologists with expertise in ultrasound diagnosis of adenomyosis was achieved regarding revised definitions of the MUSA features of adenomyosis and on the classification of MUSA features as direct or indirect signs of adenomyosis. © 2021 The Authors. Ultrasound in Obstetrics & Gynecology published by John Wiley & Sons Ltd on behalf of International Society of Ultrasound in Obstetrics and Gynecology.

Keywords: Delphi technique; adenomyosis; consensus; ultrasonography.

#### **ARTICLES ON ENDOMETRIOSIS FROM TURKIYE FROM THE LAST THREE MONTHS**

Effects of metformin and ganirelix on subcutaneous endometriosis in a mouse model of autophagyrelated cell death

Gamze Sönmez Ünal, Yasemin Albak, Nazan Yurtcu, Çağlar Yıldız, Meral Çetin, Sevgi Durna Daştan, Erkan Gümüş, and Ali Çetin Turkish Journal of Obstetrics and Gynecology 20, no. 3 (2023): 219

#### Abstract

Objective: This study aimed to investigate the efficacy of metformin and ganirelix on subcutaneous endometriotic tissues created in an experimental mouse model.

Materials and Methods: Five groups were formed with eight animals in each group. One of the groups was set as the control group. Endometriotic lesions were created by transplanting 40 mouse autologous endomyometrial tissues into the mouse subcutaneous tissue to a highly vascular surface.

Gene expression analyzes of tissues were performed as HIF-1a, ATG5, ATG12, Beclin2, Beclin1, LC3BII, CateninB, GSK3b, TCF, WNT2, WNT7a, and WNT10a gene analyzes. Drug effects were examined by histological examination. HIF1a and WNT2 protein expressions were examined immunohistochemically. Gene expression coefficients of control, metformin day 1 (Met1g), metformin day 7 (Met7g), ganirelix day 1 (Gnx1g), and ganirelix day 7 (Gnx7g) groups are shown in tables.

Data are presented as mean and standard error.

Results: Beclin2 gene expression coefficients of metformin 1st day, metformin 7th day, ganirelix 1st day, and general 7th day groups were found to have significantly decreased compared with the control group coefficient. Beclin1 gene expression coefficients of metformin 1st day, metformin 7th day, ganirelix 1st day, and genirelix 7th day groups were found to have significantly decreased compared with the control group coefficient. LC3BII gene expression coefficients of metformin 1st day and metformin 7th day groups were found to have significantly decreased compared with the control group coefficient. LC3BII gene expression coefficients of metformin 1st day and metformin 7th day groups were found to have significantly decreased compared with LC3BII gene expression coefficients of control, genirelix 1st day, and genirelix 7th day groups. These findings were supported by histological and immunohistochemical staining.

Conclusion: These genes are actively involved in the autophagy pathway, and we think that the use of metformin in endometriosis might create an autophagy-based suppression mechanism.

Keywords: Endometriosis, ganirelix, metformin, subcutaneous endometriosis, mouse model

## Use of serum copper and zinc levels in the diagnostic evaluation of endometrioma and epithelial ovarian carcinoma

Zeynep Ece Utkan Korun, Mehmet Erdem, Ahmet Erdem, Anıl Onan, Nuray Bozkurt, Mesut Öktem, and Kutay Biberoğlu. Česká gynekologie 88, no. 4 (2023)

Abstract

Objective: The aim of this study is to evaluate serum copper (Cu) and zinc (Zn) levels in patients with epithelial ovarian cancer and endometrioma.

Materials and methods: We included 21 epithelial ovarian cancer patients, 47 endometrioma patients, 31 healthy women of reproductive age, and 10 healthy women in menopause. Cu and Zn levels and Cu/Zn ratios were compared.

Results: In the endometrioma group, Cu levels (P = 0.04) and Cu/Zn ratio (P < 0.01) were higher, while Zn levels (P < 0.01) were lower compared to the control group. The threshold value of 1.15 with 62%

page 12

sensitivity and 61% specificity was calculated for the Cu/Zn ratio using the ROC curve (AUC = 0.688; P = 0.005). In the ovarian cancer group, Cu levels (P  $\leq$  0.01) and Cu/Zn ratio (P =0.02) were higher, whereas Zn levels (P  $\leq$  0.02) were lower compared to the control group. The Cu/Zn ratio threshold value of 1.37 was calculated with 76% sensitivity and 90% specificity (AUC =0.829; P = 0.004). The Zn level was lower (P = 0.02), and the Cu/Zn ratio was higher (P = 0.01) in the ovarian cancer group compared to the endometrioma group.

Conclusion: The threshold value of the Cu/Zn ratio for ovarian cancer could be determined with a specificity of 90%, whereas the sensitivity and specificity of the Cu/Zn ratio for endometrioma were low.

Key words: copper, zinc, ovarian cancer, endometrioma, copper zinc ratio

#### Effects of Quince Gel and Hesperidin Mixture on Experimental Endometriosis.

Işılay Sezen Ermiş, Engin Deveci, and Fırat Aşır

Molecules 28, no. 16 (2023): 5945.

Abstract

Objectives: Endometriosis (EM) is the presence of endometrial tissue outside the uterus. This study aimed to examine the effects of quince gel and hesperidin treatment on uterine tissue in an experimental endometriosis model.

Materials and Methods: Thirty-two rats were categorized into four groups as sham, EM, EM+quince gel (QG), and EM+QG+Hesperidin (HES). The endometriosis (EM) model was induced with surgical intervention. Estradiol benzoate (EB) was used to induce endometrial hyperplasia. In the EM group, EB was given to rats for 7 days. The EM+QG group received 2 cc QG for 21 days. HES treatment was given for 21 days after EM induction. At the end of the experiment, blood was taken from the animals and the serum total antioxidant status (TAS) and total oxidant status (TOS) values were studied. Uterine tissues were dissected and processed for histological paraffin embedding. Tissues were fixed in 4% glutaraldehyde solution and processed for ultrastructural analysis.

Results: After EM, QG and HES treatment significantly increased the TAS and decreased the TOS value. EM caused epithelial and glandular degeneration, thinning of the basal membranes, and vascular dilatation with increased fibrosis and edema. QG+HES restored the pathology and showed protective effects in uterine tissues. Caspase-3 expression was increased in the epithelium, glands, and muscle layers of the EM group. In EM+QG+HES, hesperidin protected cell survival and decreased Caspase-3 expression in uterine tissues. TNF- $\alpha$  expression was intense in inflammatory cells and the muscle layer in the EM group. HES reduced inflammation by decreasing the TNF- $\alpha$  expression. MAPK expression was increased after EM induction in epithelial, glandular, and inflammatory cells in the EM group. After HES treatment, MAPK expression was mainly negative in cells of uterine tissue in the EM+QG+HES group. Ultrastructurally, in the EM group, organelles were disrupted and dilated and degenerated after EM induction. QG and HES treatment improved cellular organelles.

Conclusion: Local vaginal applications can be an alternative treatment method in the endometriosis model via QG+HES treatment promoting cell proliferation and angiogenesis and preventing cell death.

Keywords: histochemistry; morphometry; TAS; TOS; ultrastructural

### Neutrophil gelatinase-associated lipocalin serum level: A potential noninvasive biomarker of endometriosis?

Gurhan Guney, Mine Islimye Taskin, Antonio Simone Laganà, Ezgi Tolu, Figen Aslan, Adnan Adil Hismiogullari, and Cihan Kaya.

page 13

#### Medicine 102, no. 41 (2023): e35539.

#### Abstract

Neutrophil gelatinase-associated lipocalin (NGAL, also known as lipocalin-2) is an acute-phase protein expressed in many tissues and plays a role in cell proliferation, regulation, and epithelial-mesenchymal transformation. Therefore, this study aimed to investigate serum NGAL levels and endometrioma tissue expression in women with endometriosis. This cross-sectional study was conducted at a university hospital. The endometrioma group included 36 women who underwent ovarian cystectomy for endometrioma, which was compared with a control group (n = 36) of women who underwent ovarian cystectomy due to benign persistent cysts (follicle cyst, theca lutein cyst, and serous cystadenoma). NGAL levels were analyzed using both serum enzyme-linked immunosorbent assay analysis and immunohistochemical tissue staining. Serum C-reactive protein and CA-125 levels were also evaluated. NGAL serum levels were significantly (Cont'd) higher in the endometrioma group than in the control group (P < .05). C-reactive protein and CA-125 levels were also significantly higher in the endometrioma group (P < .05) and were correlated with NGAL levels. Immunohistochemical staining for NGAL was also higher in the endometrioma group (P < .001).

NGAL may be considered a potential noninvasive biomarker of endometriosis.

Evaluation of new biomarkers in stage III and IV endometriosis.

Evrim Ebru Kovalak, Tolga Karacan, Oğuzhan Zengi, Özlem Karabay Akgül, Şefik Eser Özyürek, and Hakan Güraslan.

Gynecological Endocrinology 39, no. 1 (2023): 2217290.

Abstract

Objective: To investigate the efficacy of new endometriosis biomarkers in diagnosis and treatment.

Methods: Thirty women with Stage III-IV endometriosis who were given an indication for surgery and 49 control patients were compared. Preoperative and postoperative serum levels of Annexin A5 (ANXA5), soluble intercellular adhesion molecule-1 (sICAM-1), interleukin-6 (IL-6), tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ), soluble vascular cell adhesion molecule-1 (sVCAM-1), vascular endothelial growth factors (VEGF) and Ca-125 measurements were compared.

Results: AUCs of ANXA5, slCAM-1, IL-6, TNF- $\alpha$ , VCAM-1, VEGF biomarkers were not found to be significant in diagnosing endometriosis when evaluated alone (p> 0.05). Only the AUC of the Ca-125 biomarker values were found to be significant with 73% sensitivity and 98% specificity (p <0.001). However, when Ca-125 and ANXA5 were evaluated together, it was concluded that the diagnosis of endometriosis could be made with 73% sensitivity and 100% specificity.

Conclusion: When Ca-125 and ANXA5 are evaluated together, it seems to be more valuable than Ca-125 alone in diagnosing endometriosis.

Keywords: Endometriosis; angiogenesis; biomarker; cytokines; diagnostic markers; noninvasive.

#### page 14

#### **NEWS FROM OUR SOCIETY**



On 3 September 2023, we held our 16th EndoAcademy meeting in Denizli. The title of the course chaired by Prof. Erkan Alataş, MD and Prof. Koray Elter, MD was "Endometriosis; From Diagnosis to Management".





page 15 www.endoadeno.org.tr/en







page 16 www.endoadeno.org.tr/en







page 17 www.endoadeno.org.tr/en



#### **\*\*\***

On 24 September 2023, a symposium on "Multidisciplinary Approach to Endometriosis and Adenomyosis" was held at Atılım University campus in Ankara.









page 19 www.endoadeno.org.tr/en







page 20 www.endoadeno.org.tr/en







Dear Colleagues,

We invite abstract submissions for the "Endometriosis and Adenomyosis: Bench to

Bedside" meeting in collaboration with Oxford and Edinburgh Universities! Contribute to our event to be held on 2-3 February 2024 and have a chance to present your work. Abstract submissions will be accepted until 8 January 2024. Two best abstracts will be accepted as oral presentations and will be awarded 300 Euros each. Best abstracts will be published in the Turkish Journal of Reproductive Medicine and Surgery. Please visit our website for detailed information and registration.

Following you can find a detailed program.

### https://endoadeno2024.org

page 22











# ENDOMETRIOSIS AND ADENOMYOSIS: BENCH TO BEDSIDE

## 2-3 February 2024

İstanbul Üniversitesi, Prof. Dr. Fuat Sezgin Convention Hall, Istanbul

Chair

Engin Oral, Krina Zondervan, Ümit İnceboz, Andrew Horne

**Scientific Secretariat** 

Nura Fitnat Topbaş Selçuki, Emre Pabuçcu



ENDOMETRIOSIS AND ADENOMYOSIS:

### **BENCH TO BEDSIDE**

2-3 February 2024

İstanbul Üniversitesi, Prof. Dr. Fuat Sezgin Convention Hall, Istanl

### 2 February 2024, Friday

08:45 - 09:00	Welcome Speech	
09:00 - 10:20	1st Session: Aetiology Moderator: Philippa Saunders, Ezgi Darıcı	
09:00 - 09:30	Aetiology of Endometriosis: Overview of Current Evidence	Krina Zondervan
09:30 - 09:50	Aetiology of Adenomyosis	Jackie Maybin
09:50 - 10:20	Steroid Biology in Endometriosis	Doug Gibson
10:20 - 10:50	Keynote Lecture Moderator: Feyza Nur Tuncer Kılınç Genomics of Endometriosis and Adenomyosis Nilufer Rahmioğlu	
10:50 - 12:30	2nd Session: Clinical Pain Moderator: Koray Elter, Turgut Var	
10:50 - 11:15	How Can We Establish a Pelvic Pain Clinic?	Michael Hibner (Online)
11:15 - 11:40	Endometriosis-Related Pain; Medical Management	Christian Becker
11:40 - 12:05	Endometriosis-Related Pain; Surgical Management	Taner Usta
12:05 - 13:30	Chronic Pelvic Pain: Surgical Management	Ahmet Kale
12:30 - 13:30	Lunch	
13:30 - 14:50	<b>3rd Session: Mechanisms of Pain and Infertility</b> <b>Moderator:</b> Andrew Horne, Tolga Karacan	
13:30 - 14:00	Mechanisms of Pelvic and Comorbid Pain: An Overview	Katy Vincent
14:00 - 14:20	Animal Models in Endometriosis	Ioannis Simitsidellis
14:20 - 14:50	Mechanisms of Infertility in Endometriosis: An Overview	Nura Fitnat Topbaş Selçuki
14:50 - 15:10	Coffee Break	
15:10 - 17:30	<b>4th Session: Controversial Issues in Clinical Practice</b> <b>Moderator:</b> <i>Timur Gürgan, Yusuf Aytaç Tohma</i>	
15:10 - 15:35	Endometriosis and Adenomyosis: The Effect on Oocyte Quality	Semra Kahraman
15:35 - 16:00	AMH and Endometriosis Management	Engin Oral
16:00 - 16:25	Endometriosis and Fertility Preservation	Emre Pabuçcu
16:25 - 16:50	Adenomyosis and Fertility: What is the Current Status?	Ümit İnceboz
16:50 - 17:30	Controversial Issues in Clinical Practice	
	• 16:50 - 17:05 Deep Endometriosis Related Infertility: Surgery as First Approach	Horace Roman (Online)
	• 17:05 - 17:20 Deep Endometriosis Related Infertility: IVF as First Approach	Bülent Urman
	• 17:20 - 17:30 Discussion	





ENDOMETRIOSIS AND ADENOMYOSIS:

### **BENCH TO BEDSIDE**

2-3 February 2024

İstanbul Üniversitesi, Prof. Dr. Fuat Sezgin Convention Hall, Istan

3 February 2024, Saturday			
08:00 - 09:15	<b>Early Bird Round Table with Experts (Breakfast Round Table)</b> -Table1: Krina Zondervan and Lucy Whitaker -Table 2: Andrew Horne and Katy Vincent -Table 3: Christian Becker and Philippa Saunders		
09:15 - 10:15	1st Session: Clinial Trial Methodology Moderator: Christian Becker, Salih Yılmaz		
09:15 - 09:35	Setting Up a Multicentre Clinical Trial	Andrew Horne	
09:35 - 09:55	Patient Reported Outcome Measures (PROMS)	Katy Vincent	
09:55 - 10:15	The Role of Genetic Discovery in Clinical Trials	Lucy Whitaker	
10:15 - 10:45	Keynote Lecture Moderator:Ümit İnceboz From Aetiology to Novel Drug Targets in Endometriosis Philippa Saunders		
10:45 - 12:15	Panel: Case Discussion Moderator:Engin Oral Panelists: Christian Becker, Katy Vincent, Andrew Horne, Lucy Whitaker, Taner O Hakan Yaralı, Bülent Berker, Emre Pabuçcu	Usta, Ahmet Kale, Ümit İnceboz,	
12:15 - 13:15	Lunch		
13:15 - 14:15	2nd Session: Guidelines and Health Policies Moderator: Nura Fitnat Topbaş Selçuki, Hümeyra Özkaya		
13:15 - 13:45	Clinical Guidelines: Assessing Evidence and Making Recommendations	Christian Becker	
13:45 - 14:15	Global Health Policies in Endometriosis and Adenomyosis	Tatjana Gibbons	
14:15 - 14:35	Coffee Break		
14:35 - 15:55	<b>3rd Session: Controversial Issues in Clinical Practice</b> <b>Moderator:</b> Yücel Karaman, Gürkan Bozdağ		
14:35 - 14:50	Endometrioma Related Infertility: Surgery as First Approach	Bülent Berker	
14:50 - 15:05	Endometrioma Related Infertility: IVF as First Approach	Hakan Yaralı	
15:05 - 15:15	Discussion		
15:15-15:30	IVF in Endometriosis and Adenomyosis: Freeze All Transfer	Dominique de Ziegler (Online)	
15:30-15:45	IVF in Endometriosis and Adenomyosis: Fresh Transfer	Recai Pabuçcu	
15:45 - 15:55	Discussion		
15:55 - 16:00	Close Remarks		



### ENDOMETRIOSIS AND ADENOMYOSIS: BENCH TO BEDSIDE



İstanbul Üniversitesi, Brof. Dr. Fugt Sezgin Convention Hall, Istant

#### INVITATION

#### Dear Colleagues,

It is our privilege to invite you to "Endometriosis and Adenomyosis: Bench to Bedside" meeting which will be held in Istanbul on 2-3 February, 2024.

We know the importance of combining research and putting the findings of these research into practice in the field of "endometriosis and adenomyosis." Thus, we believe that this meeting will be one of the pioneers to combine both expert researchers and expert clinicians on endometriosis and adenomyosis to give a detailed information on this peculiar disease to all researchers, clinical practitioners, allied heath staff from all over the World.

All the expert speakers will touch upon key points and recent data on the topic and will lead to great discussions during the meeting.

We wish to see you in this studiously designed meeting in the city of Istanbul, where the continents meet

Yours Sincerely,

**Prof. Dr. Engin Oral** Founder of the Endometriosis and Adenomyosis Society, Turkey **Prof. Dr. Ümit İnceboz** President Endometriosis and Adenomyosis Society, Turkey Prof. Dr. Krina Zondervan University of Oxford, Head of Nuffield Department of Women's & Reproductive Health Prof. Dr. Andrew Horne Co-director of EXPPECT Edinburgh

#### **Scientific Secretariat**



endoadeno@endometriozisdernegi.org www.endometriozisdernegi.org +90 532 515 69 99

#### REGISTRATION

#### **Organization Secretariat**



endo-adeno@figur.net www.figur.net +90 212 381 46 00

300 EUR

- All fees include VAT. The VAT rate is 20%.
- Specialist, assistants, and company representatives are required to register to attend the congress general areas and scientific meetings. Registration fee includes participation in scientific activities, name badge, pocket program, certificate of attendance, coffe breaks and lunch
- Registration is confirmed once full payment is received. For the confirmation of your registration, please send your receipt to the organization secretariat via e-mail after making your payment.
- Figur Congress Organizations reserves the right to reflect the changes in the amounts of possible taxes, duties, and taxes on the prices.

### FROM OUR SOCIAL MEDIA ACCOUNTS



#### **NEWS FROM THE WORLD OF ENDOMETRIOSIS**





page 23 www.endoadeno.org.tr/en

#### INTERVIEW WITH AN ENDO-SPECIALIST: ERTAN SARIDOĞAN



EAS: At the previous congress, you had a presentation called "How can Turkish gynecologists take part in European platforms from the perspective of ESGE and ESHRE?". What are your recommendations regarding the societies and the opportunities outside of Turkey?

Ertan Sarıdoğan: If you are aiming for an international career, the first step should be registering to international societies. It is less likely to be taken seriously without these memberships. Moreover, it is essential to speak English at a good level to express your thoughts and communicate. It is an advantage to develop your language skills at an early age, it may be more challenging to learn a new language at later stages of life. In my personal experience, I didn't study an English prep year at the university, so I

started taking a language course in the evenings. It is also valuable to spend a couple of months abroad to develop your language skills.

It is also important to be active and involved instead of being shy and quiet. You may need to step forward at times and ask your professors to be involved in projects. After getting registered at these societies and improving your language, I would suggest you communicate with individuals and organizations. It would be easier if your professor could give recommendations for you. You can decide on the associations and the positions you would like to work in and discuss it with your professors. Networks would be helpful.

EAS: It could be challenging to finance an international career with the current economic situation in Turkey. What would be the ways to find funding?

ES: Universities have funds. Also, there are some funds, usually within the country, helping you to experience new cultures and improve your career. Associations can offer some funds too. For example, our association at the hospital supports people who would like to visit a certain country and hospital for a specific subject. You can apply by expressing your interest and explain why you want to go. These funds may have limited time periods.

EAS: Is it possible to work in the UK or in Germany for physician who got trained in Turkey?

ES: The rules are constantly changing. It could be challenging to start working as a physician in the UK. You need to be registered at the General Medical Council (GMC). Many doctors take PLAB as the best-known exam to be registered at the GMC. It is also possible to get hospitals to sponsor you and get a work permit for two years. You can pass the MRCOG exams in the meantime get your full

page 24

license. But to get a work permit you need to find a job at a hospital and then a work permit can be issued by the Home Office. The UK is one of the most difficult places in Europe to get a work permit.

EAS: What are the pros and cons of living abroad? Many people think that life would be easy and perfect, what would be your opinion as someone who lives there?

ES: It is a controversial topic. It is a long journey. I moved abroad but the knowledge gap between countries were bigger back then. Many procedures weren't used to be practiced in our country and we were lacking surgical tools. For example, ectopic pregnancies had started to be treated by laparoscopy, which wasn't that common in Turkey. IVF treatments were available in limited centers. The reason I moved abroad was to learn about IVF treatments. Nowadays, Turkey has almost all the opportunities. Life standards can be related to the political situation of the country. I think the cons are no less now than before. You leave behind your routine, family, and friends. You may not be able to speak your native language. You'd have to learn everything from scratch from paying the bills to getting your car repaired. Also, you would become a "foreigner" in another country, lose everyone and everything, and start all over again.

EAS: How is your daily routine? When do you start and stop working? Do you have an adequate team?

ES: I have a fairly busy schedule, which starts very early and ends quite late. Of course, I work with an extensive team consisting of nurses, secretaries, Ph.D., and master's students. It is not possible to get important results without a team. We collaborate with the people we need. Working with a team makes things easier. It may not be possible for everyone to work with a team. The working hours and collaborations can alter depending on the needs and desired lifestyle.

EAS: Access to reliable, high-quality information seems to be more important nowadays. What would you say about reaching trustable articles?

ES: My approach to reaching data is to follow what is being published in journals and read more extensively in my area of interest. I focus on what interests me instead of trying to read everything. I approach these articles critically and try to understand their weaknesses. That way, I can see how some articles have wrong information. Also, some journals send emails about the new articles, which makes it easier to follow. I save the ones which I think are interesting. It is important to evaluate the origin, the author's knowledge, and the article's methodology. The country of the article is not essential, the content is important. Also, you need to know what you are looking for.

EAS: And lastly, what would you suggest to us in terms of using our time efficiently?

ES: First of all, prioritize the things you need to do. Know your deadlines. Know how to say "no". Take responsibility if you accept the duty. It is also important to let people know if you feel like there might be a delay, ask for more time, or hand over the part.EAS: At the previous congress, you had a presentation called "How can Turkish gynecologists take part in European platforms from the perspective of ESGE and ESHRE?". What are your recommendations regarding the societies and the opportunities outside of Turkey?

Ertan Sarıdoğan: If you are aiming for an international career, the first step should be registering to international societies. It is less likely to be taken seriously without these memberships. Moreover, it is essential to speak English at a good level to express your thoughts and communicate. It is an advantage to develop your language skills at an early age, it may be more challenging to learn a new language at later

page 25

stages of life. In my personal experience, I didn't study an English prep year at the university, so I started taking a language course in the evenings. It is also valuable to spend a couple of months abroad to develop your language skills.

It is also important to be active and involved instead of being shy and quiet. You may need to step forward at times and ask your professors to be involved in projects. After getting registered at these societies and improving your language, I would suggest you communicate with individuals and organizations. It would be easier if your professor could give recommendations for you. You can decide on the associations and the positions you would like to work in and discuss it with your professors. Networks would be helpful.

EAS: It could be challenging to finance an international career with the current economic situation in Turkey. What would be the ways to find funding?

ES: Universities have funds. Also, there are some funds, usually within the country, helping you to experience new cultures and improve your career. Associations can offer some funds too. For example, our association at the hospital supports people who would like to visit a certain country and hospital for a specific subject. You can apply by expressing your interest and explain why you want to go. These funds may have limited time periods.

EAS: Is it possible to work in the UK or in Germany for physician who got trained in Turkey?

ES: The rules are constantly changing. It could be challenging to start working as a physician in the UK. You need to be registered at the General Medical Council (GMC). Many doctors take PLAB as the best-known exam to be registered at the GMC. It is also possible to get hospitals to sponsor you and get a work permit for two years. You can pass the MRCOG exams in the meantime get your full license. But to get a work permit you need to find a job at a hospital and then a work permit can be issued by the Home Office. The UK is one of the most difficult places in Europe to get a work permit.

EAS: What are the pros and cons of living abroad? Many people think that life would be easy and perfect, what would be your opinion as someone who lives there?

ES: It is a controversial topic. It is a long journey. I moved abroad but the knowledge gap between countries were bigger back then. Many procedures weren't used to be practiced in our country and we were lacking surgical tools. For example, ectopic pregnancies had started to be treated by laparoscopy, which wasn't that common in Turkey. IVF treatments were available in limited centers. The reason I moved abroad was to learn about IVF treatments. Nowadays, Turkey has almost all the opportunities. Life standards can be related to the political situation of the country. I think the cons are no less now than before. You leave behind your routine, family, and friends. You may not be able to speak your native language. You'd have to learn everything from scratch from paying the bills to getting your car repaired. Also, you would become a "foreigner" in another country, lose everyone and everything, and start all over again.

EAS: How is your daily routine? When do you start and finish working? Do you have an adequate team?

ES: I have a fairly busy schedule, which starts very early and ends quite late. Of course, I work with an extensive team consisting of nurses, secretaries, Ph.D., and master's students. It is not possible to get important results without a team. We collaborate with the people we need. Working with a team makes things easier. It may not be possible for everyone to work with a team. The working hours and collaborations can alter depending on the needs and desired lifestyle.

page 26

EAS: Access to reliable, high-quality information seems to be more important nowadays. What would you say about reaching trustable articles?

ES: My approach to reaching data is to follow what is being published in journals and read more extensively in my area of interest. I focus on what interests me instead of trying to read everything. I approach these articles critically and try to understand their weaknesses. That way, I can see how some articles have wrong information. Also, some journals send emails about the new articles, which makes it easier to follow. I save the ones which I think are interesting. It is important to evaluate the origin, the author's knowledge, and the article's methodology. The country of the article is not essential, the content is important. Also, you need to know what you are looking for.



INTERVIEW Assoc. Dr. Nilüfer Akgün Gynecology and Obstetrics Specialist

EAS: And lastly, what would you suggest to us in terms of using our time efficiently?

ES: First of all, prioritize the things you need to do. Know your deadlines. Know how to say "no". Take responsibility if you accept the duty. It is also important to let people know if you feel like there might be a delay, ask for more time, or hand over the part.

#### CV of PROF. ERTAN SARIDOĞAN MD

Ertan Saridogan studied medical school at Hacettepe University and did his residency at Istanbul University Department of Obstetrics and Gynaecology. He then moved to London and finished his PhD at St Bartholomew's and University of London.

He is a consultant in reproductive medicine and minimal access surgery at University College London Hospitals NHS Foundation Trust. He is a past president of the British Society for Gynaecological Endoscopy, current president of International Society of Reproductive Surgery, and a member of the European Society for Gynaecological Endoscopy Executive Committee as the chair of Scientific Programme of Annual Congresses.

His clinical interests include laparoscopic and hysteroscopic surgery for benign gynaecological conditions, reproductive surgery, endometriosis, fibroids and outpatient hysteroscopy.

His research interests include non-invasive diagnosis of endometriosis, clinical outcomes following endometriosis surgery, outpatient hysteroscopy, and the place of screening and risk-reducing surgery in women with a history of familial cancer.



### Follow and Contact Us on our Social Media Accounts





Endometriosis e-bulletin is prepared by the **Endometriosis and Adenomyosis Society Turkiye**. If there are any topics that you would like us to include in the bulletin or any questions you would like to ask, you can contact us via e-mail at **drturgutvar@yahoo.com** 

Dernek: Osmanağa Mah. Osmancık Sok. Betül Han No: 9 D: 4 Kadıköy, İstanbul - Turkey

Phone: +90 (532) 515 69 99

page 28