CODEN [USA]: IAJPBB ISSN : 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES
SJIF Impact Factor: 7.187
http://doi.org/10.5281/zenodo.4321281

Avalable online at: http://www.iajps.com *Review Article*

ROLE OF ULTRASONOGRAPHY FOR THE EVALUATION OF UTERINE FIBROMYOMAS AND INFERTILITY- A SYSTEMATIC REVIEW

Mr Abdullahi Abubakar, Syyeda Khadija, Dr Syid Amir Gilani, Dr Raham Bacha.
Mr.abdullahiabubakar1010@gmail.com
BS Medical Ultrasound, MS Medical Diagnostic Ultrasound.
Department of, University Institute of Radiological Sciences and Medical Imaging Technology (UIRSMIT), Faculty of Allied Health Science; University of Lahore, Pakistan.

Article Received: October 2020 **Accepted:** November 2020 **Published:** December 2020

Abstract:

Introduction: *Fibromyomas are the most prevalent cancers in the female genital tract. Fibroids have benign development in the structural lining of the uterus, consisting mainly of smooth muscles. Fibroids are classified by common names, such as carcinoma, leiomyomata, myoma and fibromyoma. It may be found in various areas of a uterus, thus called due to their position in the uterus. Fibroids range in size from as little as a pea to as wide as ten inches. The association between fibroids and infertility is problematic in discovering the effect of uterine fibroids on infertility. Ultrasonography is a High Standard procedure for the diagnosis of uterine fibroids. The aim of this Observational Analysis is to explore fibroids and their various forms and their effect on infertility. Fibroids affect women in all age categories and whose treatment is important to improve fertility outputs.*

Purpose: *The holistic review is carried out with the aid of numerous empirical studies conducted between 2005 and 2020 on the role on ultrasound Sonographic for the evaluation of uterine fibromyomas and their effects on infertility.*

Method: *Related uterine fibroid partnership and infertility effect via ultrasonographic databases were obtained from MEDLINE, PubMed, Cochrane Library from 2005 to 2020. Randomized control experiments, prospective cohort tests, observational paired trials from well-defined registry data are performed. Multiple systematci analyses are carried out via contextual analysis.*

Result: *A maximum of 2451 research papers and 480 full-text publications are researched and downloaded. There was a substantial risk of bias and low-quality data, but high-quality evidence suggests that using ulrasound modalities is a reliable tool for identifying the effect of uterine fibromyomas on fertility is still contentious. A lot of research have been done, and most of these research offer contentious findings. fibromyomas have an effect on fertility, but it appears that not all leiomyomas induce infertility and a number of treatments, such as myomectomy, uterine fibroids ablation.*

Conclusion: *Ultrasonography is a better choice for initial evaluation and identification in patient with uterine fibromyomas and infertility, becouse it is widely available, relatively cheaper than other imaging ivestigation modalities and is noninvasive as compared with other modalities.*

Keywords: *Ultrasonography, fibromyomas, Transabdominal, Transvaginal, infertility*

Corresponding author:
Abdullahi Abubakar,
Mr.abdullahiabubakar1010@gmail.com

QR code

Please cite this article in press Abdullahi Abubakar et al, ***Role of Ultrasonography for the Evaluation of Uterine Fibromyomas and Infertility- A Systematic Review.,*** *Indo Am. J. P. Sci, 2020; 07(12).*

INTRODUCTION:

The female uterine fibromyomas are pathological growths that occur in or on the uterus of a woman. Often these tumours grow very large and cause intense abdominal pain and severe periods of time[1]. This pathology (myoma) are abnormal growths that develop near or in the uterus of a female. This tumours also develop very large, causing extreme abdominal pain and stretches of time[2]. Ultrasound is a modality of choice for quality diagnosis and cheaper with noninvasive and non-ionizing as compared with other modalities. The prevalence of uterine fibromyomas by ultrasound ranges in patient depending on age, ethnicity and procedure used to diagnosis uterine myoma such as ultrasonography, and other imaging modalities related respectively, etc[3]. This abnormalities of patient with uterine fibromyoma are most often identified in womens come for infertility inquiry and are also diagnosed with uterine fibroids[4,5]. They are often asymptomatic and seldom detected before menarche and menopause and regress since they have been found to be hormone responsive and induce the development of oestrogen[5]. Submucosal myomas often higher more hormonal active than subserosols[6]. Among the females patient having uterine fibrmyomas in their lifespan were approximately over seven to eight out ten[7,8] In patient with uterine fibromyomas can cause chronic inflammation of the myometrium and impair its contractility and blocking of the implantation[9].

The prevalence level according to literature ranges from twenty per cent to fifty per cent with age and race. The present research indicates that the incidence of uterine fibomyomas increases with age and also the tendency to get pregnant is lower with elevated age and more difficult with the family history of uterine fibromyoma and infertility[10]. The bulk of the fibromyomas is asymptomatic. Symptoms that are due to uterine myomas include pelvic pain, tenderness, bloating, pelvic discomfort, extreme menstrational bleeding, and infertility. Women that become pregnant in the presence of uterine fibroids have a direct effect on the development of fibroids[11].

The fibromyomas are composed of a bundle of smooth muscle cells.15 which arise as mutations in a single cell of myometrium and as a result of mutation growth occurs through clonal expansion.16 Estrogen is responsible for fibroid growth and there are also other growth factors and progesterone that have boosted its production[12,]13. Such are the various mechanical causes that affect reproduction with respect to uterine fibromyomas, such as tubal ostia, due to fibroids present in the uterine cavity impact restriction, which may result in sperm and embryo transport obstruction. Physiopathological improvements in myometrium and endometrium and the fibroid effect on endometrium elongation and distortion of the implantation window[14].

In seldon cases, uterine fibromyoma are of various forms, based on their position and origin in the uterus. Fibroids have been found in myometrium. Submucosa fibroids are found in the uterine cavity. Intramural fibroids detected on ultrasound in the wall of the uterus tend to be a bulge on the uterine cavity. Subserosal fibromyoma induces sdetoriation within the serosal wall of the uterus which has a direct effect on fertility. Its location is relevant because fibroid management and treatment is dependent on its form and place of location[15] Figgure 1 shows TAS of utrus with subserosal fibrmyomas detection.

Sometime using gray scale ultrasound as a Gold Standard for the detection and diagnosis of uterine fibromyomas. The first step in examining and diagnosing uterine fibromyomas is an ultrasound in which 2D and 3D, colour doppler as well as sonohysterography play an additional role. 2D or grey scale ultrasonography helps to test uterine fibromyomas according to their sonographic properties, while colour doppler ultrasound helps to access blood supply. It is useful to separate it from malignant tumours[16]. Various variations of UF echogenicity due to varying internal structure and degeneration contribute to diagnostic uncertainty. Such sonographic characteristics of the uterine fibroids include variable appearance, hypoechoic or heterogeneous density, exaggeration of the exterior uterine contour, attenuation or shadowing without differentiated mass, calcification, degenerative changes and necrosis. Intramural fibromyomas form in the lining of the uterus and spread inward, raising the size of the uterus; This makes it feel bigger than average in the gynaecological review[17,18.] This figure shows submecosal and intramural fibromyomas.

Ultrasound diagnosis of uterine fibromyomas is reliable, but some time misdiagnosed by other pelvic pathologies such as adnexal masses. Subserosal or exophytic fibroids with short stalks misdiagnosed as adnexal bulk. Laterally bulging fibroids presenting as symmetrically bilobed uterus and misdiagnosed as bicornuate on the uterus[19]. Intestial fibroids created concern about ectopic pregnancy. Many trends of uterine fibromyomas chogenicity attributable to different internal compositions and degeneration contribute to the diagnostic mystery. Such sonographic characteristics of the uterine fibroids

include variable appearance, hypoechoic or heterogeneous density, exaggeration of the exterior uterine contour, attenuation or shadowing without differentiated mass, calcification, degenerative changes and necrosis[20]

Various experiments have shown that the effects of uterine fibroids on infertility is controversial, since subserosal fibroids have little effect on fertility. Mostly these are pedunculated with stalk inducing abdominal pressure and distention. Intramural fibroid effects on fertility are not well defined, based on their position and interfaces with endometrium, so they may and may not cause infertility. Submucosal fibroids affect the endometrial cavity and deform it by impacting fertility and inducing infertility.[21] .Figgure 2 shows asubmecosal fibromyomas.

Besides fibromyomas various types of diagnosis and intervention are used these days myomectomy is fundamental basis for UF and overall effectiveness is important in women with fibromuscular endometriosis. Many approaches include uterine artery embolization (UAE), hysterectomy, hysteroscopic resection of uterine fibroids, endometrial resection, regulated protocols for MRI Figgure 4 Show fibromyomas in different location within the utrus[22].

METHOD:

Search Stratagy

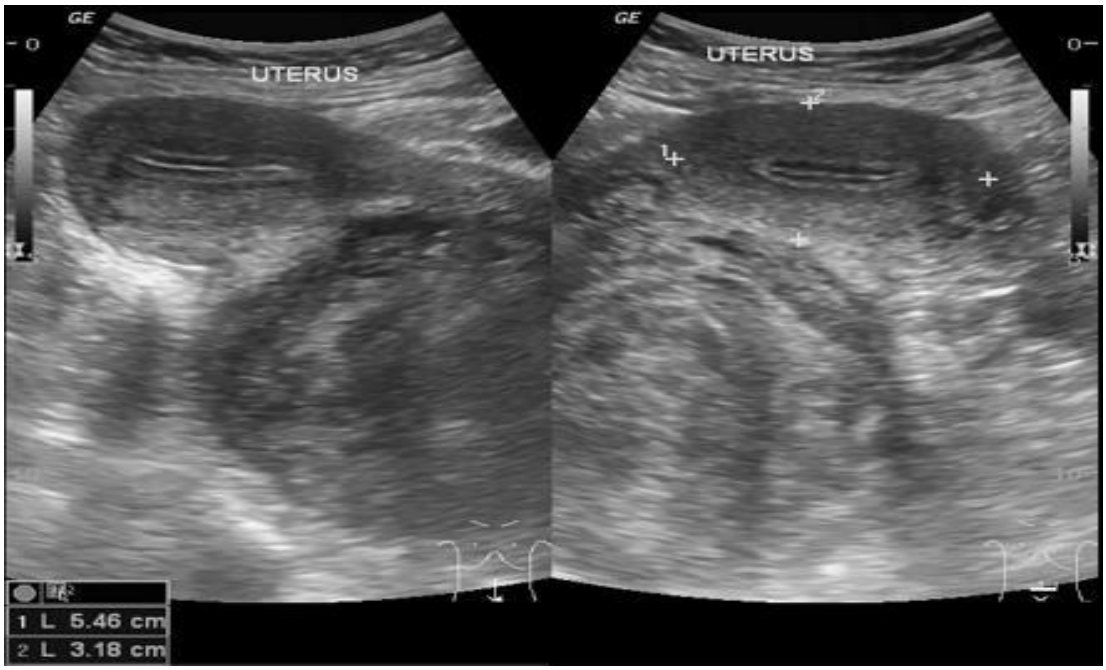
Literatures like Google Scholar, science Direct, PubMed were used and key words like Ultrasonography, and uterine fibromyomas were used

Study Selectiom

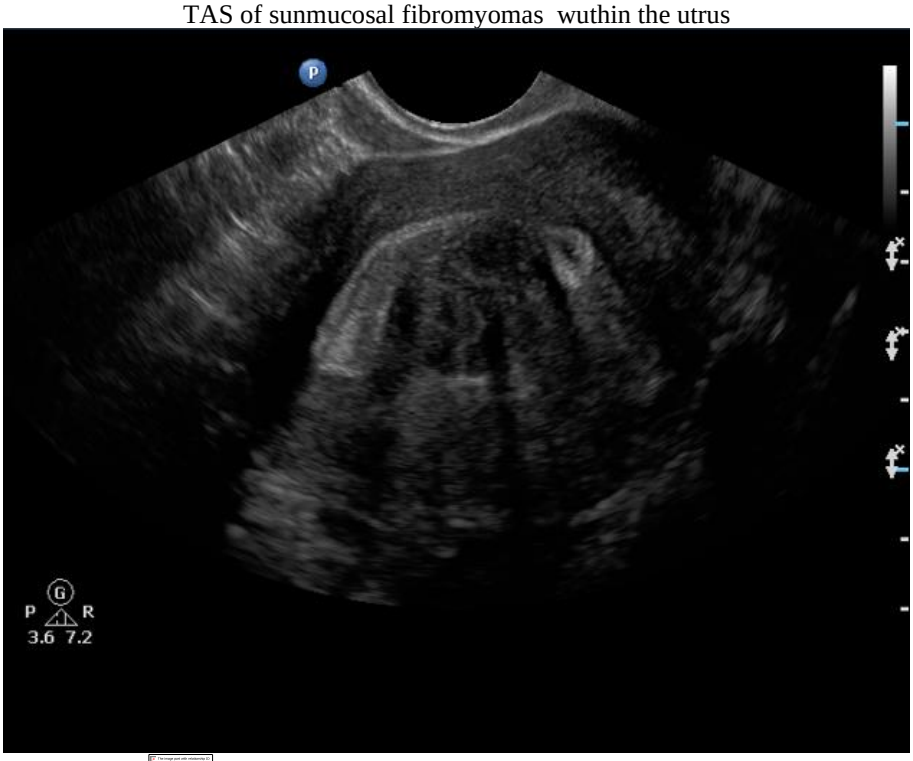
Related uterine fibroid partnership and infertility effect via ultrasonographic databases were obtained from MEDLINE, PubMed, Cochrane Library from 2005 to 2020. Randomized control experiments, prospective cohort tests, observational paired trials from well-defined registry data are performed. Multiple systematci analyses are carried out via contextual analysis.

Images

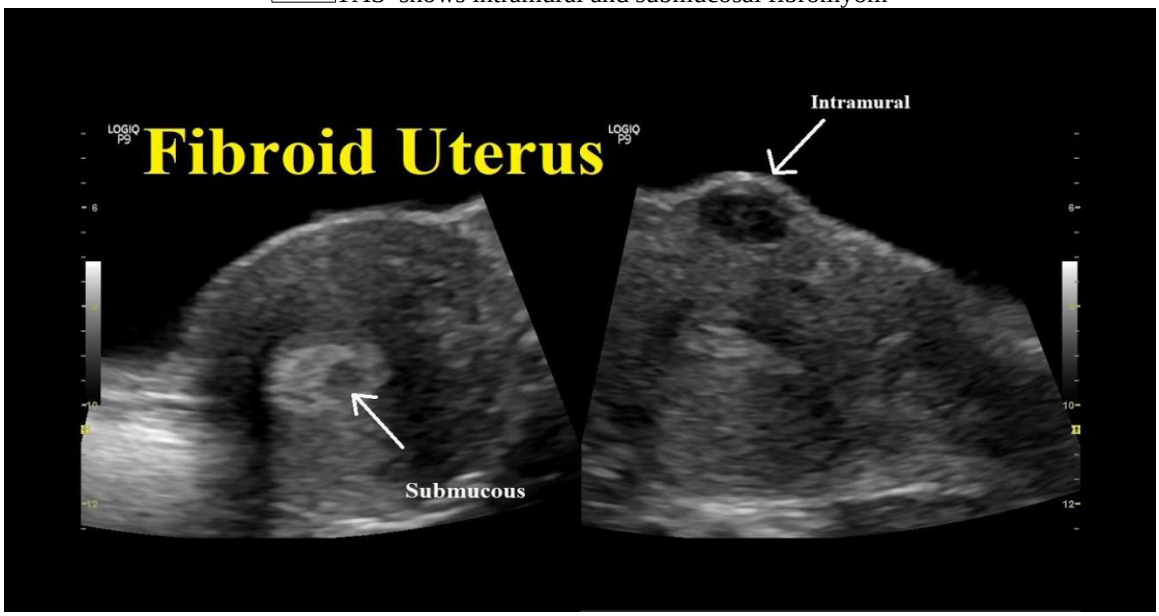
TAS of Subserosal fibromyomas within the utrus



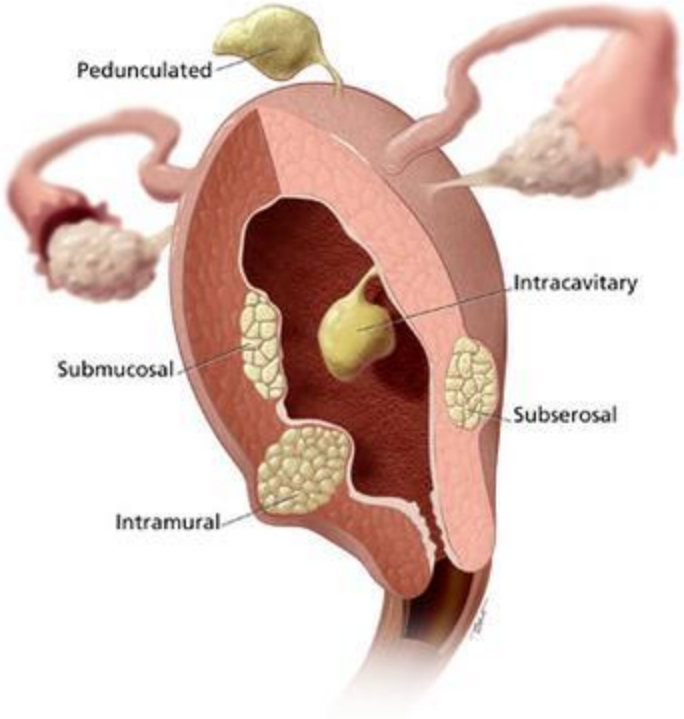
TAS of sunmucosal fibromyomas wuthin the utrus



TAS shows intramural and submucosal fibromyom



Fibromyomas in different location within the utrus



RESULT:

In 2012, P. Gambadauro had a study on Dealing with Uterine Fibroids in Reproductive Medicine by using secondary data and get results that the impact and interference of uterine leiomyomas largely depend on their size and location submucosal fibroids have an impact on fertility and embryo implantation and its management are necessary for infertility treatment by considering their sign and symptoms. Intramural fibroids which distorted cavity impact on fertility and those who don't distort cavity their impact is controversial on fertility because distortion in cavity impact receptivity of endometrium and embryo implantation. No evidence in asymptomatic and infertile patients support the removal of subserosal fibroids[24]

Marek Lisiecki made a literature review in 2017 on the title Fertility Impairment Associated with Uterine Fibroids – a review of literature. A comprehensive review of literature on uterine fibroids and their influence on fertility impairment was carried out. PubMed and Google Scholar websites were used to find significant articles. Terms such as: "uterine fibroids", "fibroids", "leiomyomas", "myomas" were used in combination with "fertility", "infertility", "fertility impairment". The report was written and published in Polish and English language. According to existing literature, the relationship between infertility and uterine leiomyomas was described. According to them submucosal and intramural fibroid have an impact on fertility and receptivity and gene expression of endometrium specially submucosal fibroids which distort endometrial cavity.there was a study gap about intramural fibroid and they recommended further study on intramural fibroids impact on fertility[25]

Elizabeth A. Pritts made a systematic review in 2009 on the topic of Fibroids and infertility: An updated Systematic Review of the Evidence. This systematic literature review and meta-analysis of existing controlled studies on private centre for reproductive endocrinology and infertility. Patients were women with fibroids and infertility and technique and study design was a systematic literature review, raw data extraction and data analysis. According to this evidence-based strong study women with subserosal fibroids have no impact on their fertility as compare to females with infertility and no myomas. Females with intramural fibroids having an impact on their fertility with less fertility and increased pregnancy loss but quality and authenticity was poor. Submucosal

fibroids have an impact on fertility and after myomectomy its fertility outcomes increases[26]
Ayman Al-Hendy made a research on Uterine Fibroids: Burden and Unmet Medical Needs in 2017 by using previous data review and concluded that Uterine fibroids affect a large segment of the population and can negatively impact on their daily routine and quality of living and result in o severe occupational and economic costs in effected females the rate of sufferance with uterine fibroids are more in black women and treatment of UF may cause temporary or permanent loss of fertility but with limited success with surgical and pharmacologic treatments are pursued[27]

Fabio Parazzini conducted a research on Pregnancy Outcome and Uterine Fibroids in 2015. Large randomized trials were planned in order to compare the efficacy of different modalities of treatment of intramural fibroids before pregnancy on pregnancy outcome and got results that In conclusion clinical experiences and some observational studies suggests that submucosal fibroids have a negative impact on pregnancy outcome. The role of intramural or subserous fibroids is less clear but multiple or large fibroids have likely a negative role on pregnancy outcome[28]

Sotirios H. Saravelos made a study in 2011 on The prevalence and impact of fibroids and their treatment on the outcome of pregnancy in women with recurrent miscarriage. The study analysed retrospective and prospective data from a large tertiary referral RM clinic. Couples were investigated as per established protocol. Fibroids were diagnosed using combined transvaginal ultrasound and hysterosalpingography. Fibroids distorting the uterine cavity were resected via hysteroscopy. Two study groups were subsequently examined: women with cavity-distorting fibroids who underwent surgery (n ¼ 25) and women with fibroids not distorting the cavity who did not undergo any intervention (n ¼ 54). The latter was compared with a control group of women with unexplained RM (n ¼ 285). They concluded that females with uterine fibroids which distorted the cavity undergoes by interventions have increased rate of midterm miscarriages as compared to females in which fibroids don't distort the cavity[29]

Ertan Saridoganmade research in 2006 on endoscopic management of uterine fibroids by using secondary data and concluded that Endoscopic management of uterine fibroids in women both with menstrual disorders and/or subfertility has become an established and widely used technique in the last few decades. Hysteroscopic myomectomy is now the standard treatment for the majority of women with submucosal fibroids. Laparoscopic myomectomy is suitable for a selected group of women with intramural and subserosal fibroids but requires considerable experience in advanced laparoscopic surgery[30]

Giovanna Tropeano made a study in 2008 on Non-Surgical Management of Uterine Fibroids by using PubMed, Cochrane and Embase were searched up to December 2007. Studies reporting side-effects and complications and presenting numerical data on at least one outcome measure were included Good quality evidence supports the safety and effectiveness of UAE for women with symptomatic fibroids. The current available data are insufficient to routinely offer UAE to women who wish to preserve or enhance their fertility. Newer treatments are still investigational[31]

William H. parker made a literature review on Etiology, Symptomatology and Diagnosis of Uterine Myomas in 2007 by using a Literature review of 220 articles pertaining to uterine myomas and concluded that a summary of the available literature regarding the biology, aetiology, symptomatology and diagnosis of myomas shows that they are still not well understood, much has been learned about uterine myomas[32]

Ben Kroon made research in 2011 on Fibroids in infertility consensus statement from ACCEPT by using previous articles and data according to this review Fibroids occur commonly in women of the reproductive age group. The question of whether the existence of a fibroid is causally related to a couple's infertility depends on its location and the existence of other factors that may explain the inability to conceive. Clinicians working with infertile patients should be aware that the evidence guiding the management of uterine fibroids is generally not strong. SS fibroids do not appear to have a significant effect on fertility outcomes, and thus removal is generally undertaken for symptomatic reasons only. IM fibroids may be associated with reduced fertility and an increased MR; however, there is insufficient evidence to inform whether myomectomy for IM fibroids improves fertility outcomes. SM fibroids are associated with reduced fertility and an increased MR, and myomectomy for SM fibroids appears likely to improve fertility outcomes. The relative effect of multiple or different sized fibroids on fertility outcomes is uncertain, as is the relative usefulness of myomectomy in these situations[33]

Pankaj Desai conducted research on Fibroids in 2011, Infertility and Laparoscopic Myomectomy by using

Medline, PubMed, and Cochrane Databases searched for articles published between 1980 and 2010. They concluded that females with submucosal fibroids having infertility and myomectomy are fruitful for fertility outcomes in these females. Subserosal fibroids have no impact on fertility and its removal is not necessary. Intramural fibroids appear to decrease fertility. Although pregnancy rates for women with leiomyomata, managed endoscopically, are similar to those after laparotomy, there is a risk of uterine rupture[34]

Andrew Horne conducted research in 2007 on The Effect of Uterine Fibroids on Embryo Implantation by using secondary data of previous searches and published articles. In this research concluded that the causal relationship between fibroids and failure of embryo implantation is unclear. Unfortunately, due to variations in location, size, and number of fibroids and the presence of additional factors impact on fertility or infertility. This research was not conclusive and suggested that more fundamental research must be performed to detect the mechanisms of infertility, by comparing pregnancy rates of women with and without fibroids[35]

A research review was made by C. Benecke on Effect of Fibroids on Fertility in Patients Undergoing Assisted Reproduction in 2005. In this review, articles were found by means of computerized Medline and Cochrane Library infertility and in vitro fertilization in human in 1990–2002. According to inclusion criteria pregnancy data on in vitro fertilization. One group of Intramural fibroids with no cavitary distortion and other control groups without myomas. According to their results a significant negative impact on implantation rate in the intramural myomata groups versus the control groups, 16.4 vs. 27.7% or 0.62 (0.48–0.8). The delivery rate per transfer cycle was also significantly lower (myomata vs. control), 31.2 vs. 40.9% or 0.69 (0.50–0.95)[36]

Rachel M. Whynott made a systematic review in 2017 on The Effect of Uterine Fibroids on Infertility this systematic review was performed following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. An electronic search of the PubMed database using the keywords “Fibroid” and “Infertility” was performed from 1996 until February 2017. Only English-language articles were included. A total of 558 articles were identified, or summary analyses of fertility outcomes were included. In this review, concluded that the uterine fibroids vary in size and shape and its presence affects fertility. Surgical interventions are beneficial as compare to non-invasive medical treatment. In management of uterine fibroids the myomectomy is Gold Standard, In management of infertility Submucosal fibroids should be treated. Intramural fibroids greater than 3 cm may cause infertility and Subserosal fibroids generally do not influence a woman’s ability to get pregnant[37]

Barbara S. Levy conducted a study on the Modern management of uterine fibroids in 2008, A detailed literature search was conducted using PubMed, which comprised the following search terms: uterine fibroids, uterine myomas, mifepristone, asoprisnil, gonadotropin-releasing hormone agonist, hysterectomy, laparotomy, laparoscopic myomectomy, hysteroscopic myomectomy, myolysis, cryomyolysis, uterine artery embolization (UAE), laparoscopic uterine artery occlusion (LUAO), magnetic resonance imaging (MRI) ultrasound, Doppler-guided uterine artery occlusion (D-UAO), and MRI-guided interstitial laser photocoagulation. Most of the references which are included and already published in 2018 and some material was obtained from online women’s health resources provided by OBGYN.net, The Reproductive Science Center of the San Francisco Bay Area, and by online clinical guidances provided by The National Institute for Health and Clinical Excellence. Numerous modalities for the management of uterine fibroids are available but many methods having some drawback so by considering all these things new modalities and methods were valuable. Many females who want to be pregnant while suffering from uterine fibroids for them uterine sparing approach is beneficial. The choice of used modality depends on female clinical presentation their need and approach which is used must be effective, safe and minimally invasive for fibroids more than 5cm and distort endometrial cavity needs management of uterine fibroids after considering safety and efficacy[38]

Tariqu Salman made a conclusive study on Uterine fibroids, Management and Effect on fertility in 2010 by using previous articles on fibroids and fertility relation and concluded that submucosal fibroids having no impact on fertility and intramural fibroids also doesn’t impact fertility but it's controversial without strong evidence after studying the results of IV fertilisation there are no strong evidences that submucosal and intramural fibroids are associated with lower implantation, pregnancy and birth rates for fibroids more than 5cm and distort endometrial cavity needs management of uterine fibroids after considering safety and efficacy[39].

Elizabeth A. Stewart made a study in 2013 on The Burden of Uterine Fibroids for African American Women: Results of a National Survey bu using An online survey which was conducted by Harris Interactive between December 1, 2011 and January 16, 2012. Participants were U.S. women aged 29–59 with symptomatic uterine fibroids. African-American women were oversampled to allow statistical comparison of this high-risk group. Bivariate comparison of continuous and categorical measures was based on the T-test and the Chi-squared test, respectively. Multivariable adjustment of risk ratios was based on log-binomial regression. The survey was completed by 268 African-American and 573 white women. There were no differences between groups in education, employment status, or overall health status. African American women were significantly more likely to have severe or very severe symptoms, including heavy or prolonged menses (RR = 1.51, 95% CI 1.05–2.18) and anemia (RR = 2.73, 95% CI 1.47–5.09). They also more often reported that fibroids interfered with physical activities (RR = 1.67, 95% CI 1.20–2.32) and relationships (RR = 2.27, 95% CI 1.23–4.22) and were more likely to miss days from work (RR = 1.77, 95% CI 1.20–2.61). African-American women were more likely to consult friends and family (36 vs. 22%, P = 0.004) and health brochures (32 vs. 18%, P < 0.001) for health information. Concerns for future fertility (RR = 2.65, 95% CI 1.93–3.63) and pregnancy (RR = 2.89, 95% CI 2.11–3.97) fibroid treatments were key concerns for black women[40]

Bijan J. Borah conducted a study in 2013 on the impact of uterine leiomyomas: A National Survey of affected Women. This comparative study was based on national survey aged 29-59 years with self-reported symptomatic uterine leiomyomas. According to their research results, uterine fibroids cause morbidity in females who want to conceive specially in age 40. it's supported the evidence that age impact fertility with complication of myomas[41]

Javier Monleón make a case report study in 2014 on topic Successful Pregnancy after Treatment with Ulipristal Acetate for Uterine Fibroids by using variables, ulipristal acetate, pregnancy. Patient with uterine fibroid introduce ulipristal acetate result in a regression in uterine fibroid and progressive intrauterine pregnancy result in successful delivery[42]
David L. Olive make a study in 2010 on Fibroids and Reproduction by using secondary data and concluded that uterine fibroids impact on infertility. Submucosal myoma cause infertility, intramural fibroids may decrease fertility and subserosal having no authentic evidence to influence on fertility[42]

M. David made research in 2013 on Uterine Fibroid Embolisation – Potential Impact on Fertility and Pregnancy Outcomes by previous literature reviews they concluded that UAE should not be a treatment of choice for women who want to conceive there are currently very few prospective studies with results backed by sufficient evidence on impact of UAE therapy on fertility and pregnancy outcomes on basis of their literature review, the following recommendations are proposed: the existing evidence recommend that the females with myomas want to conceive operative myomectomy should be procedure of choice as compared to UAE prove fertility. The case series and studies show that UAE significantly increases the risk of spontaneous abortion additional investigations will be needed to understand the causes of the observe[43]

Aamir T Khan made a review in 2014 on Uterine fibroids: current perspectives by using secondary data by review of 205 articles. They got brief results that although they are essentially benign, uterine fibroids are associated with significant morbidity to nearly 40% of women during their reproductive years and sometimes even after menopause. Therefore, there is considerable interest in discovering any etiological clues in factors including dietary, stress, and environmental influences. The most practical investigative modality has always been gray-scale ultrasonography, but with the developments of innovative methods of treatments, it is not just enough to diagnose the presence of the fibroid, but also its dynamic relation with surrounding tissue as well. With more and more patients demanding a nonsurgical approach to their symptoms, there is a developing market for selective estrogen and especially progesterone receptor modulators, and exploring the role of aromatase inhibitors, vitamin D, and green tea extract. Gone are the days when the only surgical approach for fibroids was offering a myomectomy or hysterectomy. The concept of vascular embolization has altered the playing field and allowed women to preserve their fertility status without resorting to surgery. This is being further investigated by the FEMME (A randomised trial of treating Fibroids with either Embolisation or Myomectomy to Measure the Effect on quality of life among women wishing to avoid hysterectomy) trial (to measure and compare the changes in the quality of life women experience when their fibroids are treated by either myomectomy or uterine artery embolization). Minimally invasive

management of fibroids has been even further enriched by the development and introduction[44]

E. Somigliana made a review in 2007 on Fibroids and Female Reproduction: a critical analysis of the evidence by using secondary data and got conclusive brief results Epidemiological evidence on the relationship between infertility and fibroids is not conclusive due to methodological limitations. Conversely, two main pieces of clinical evidence support the vision that fibroids may interfere with fertility. First, insights from the IVF model suggest a detrimental effect on implantation: the delivery rate is reduced in patients with fibroids, while it is not affected in patients who had undergone myomectomy. Second, even if randomized studies are lacking, surgical treatment appears to increase the pregnancy rate: about one of two women undergoing myomectomy for infertility subsequently conceives. A major point to be considered in this area is related to the severity of the disease. Uterine leiomyomata is a heterogeneous condition varying from a small single subserosal fibroid to multiple large lesions that radically distort pelvic anatomy. Whereas the effect on fertility of the former is irrelevant, the latter strongly impairs the probability of conception. Available evidence suggests that submucosal, intramural and subserosal fibroids interfere with fertility in decreasing order of importance. Although more limited, some evidence also supports an impact of the number and the dimension of the lesions. The notion that fibroids affect fertility has to be translated into clinical practice. Drawing clear guidelines for the management of fibroids in infertile women is however difficult due to the lack of large randomized trials aimed to elucidate which patients may benefit from surgery. The Practice Committee of the American Society for Reproductive Medicine (2006) recommends surgical treatment after complete evaluation of other potential factors of infertility. We believe that this view is somehow simplistic and we suggest to adopt a comprehensive and personalized approach in the decision-making process to identify the best option for the woman. At least four points have to be considered: (i) the age of the woman; (ii) the location[45]

In 2014, Kristin Van Heertum made a review-based study on uterine fibroids associated with infertility and concluded that uterine fibroids incidence increases with age[46]

In 2015, Leonidas I. Zepiridis conducted a study on Infertility and Uterine Fibroids by using Secondary data based on meta-analysis made by different authors on hundreds of researches on correlation of fibroids and infertility and they concluded on basis of available evidence that the submucosal fibroids of any size and intramural fibroids of >4cm significantly impairs fertility and IVF whereas subserosal fibroid has little or no effect on fertility[47]

A research was conducted by P. Purohit in 2016 on fibroids and infertility. they used 42 articles and by their systematic review on basis of evidence he concluded that the relationship between fibroid and infertility is weak. According to him for getting conclusive results on correlation of fibroids with infertility and impact of uterine leiomyomas on fertility. The types and location of myomas and Impact on endometrium is important. Submucosal fibroids should be treated hysteroscopically. Intramural fibroids management vary case to case and subserosal fibroids don't have any major impact on infertility[48]

A review-based study was made by Aradhana Khaund in 2008 on Impact of fibroids on reproductive function. A large prospective study was conducted for evaluating the relationship between fibroids and infertility with comparison made with a control group of normal females and randomized trials on these control group was made and comparison of myomectomy versus other uterine sparing technique was made on these control groups. Submucosal and intramural fibroids which distort the endometrial cavity cause infertility and by ART miscarriages rate decreases and pregnancy rates successful[49]

In 2007, Neelanjana Mukhopadhaya conducted research on Uterine Fibroids Impact on Fertility and Pregnancy Loss. It was a systematic review made by using previous studies and elaborate this data in form of charts, tables and summary. At present, according to previous data fibroids associated with infertility is 5-10 % by strong evidence submucosal fibroids are indeed associated with subfertility, and possibly miscarriage, and hysteroscopy resection is beneficial. Intramural fibroids impede successful outcomes of ART. Subserosal fibroids have no impact on pregnancy loss and fertility[50]

DISCUSSION:

Holding in mind the findings of the research listed above, it is evident that the significance of ultrasonography as a diagnostic modality cannot be overlooked and has a propensity to disclose essential details in order to diagnose uterine fibromyomas infertility.Various techniques of diagnosis and therapy are applicable and applied in gynaecological medical education. Realistic research project on invasive and

non-invasive UF treatment methods for their type should be carried out.

CONCLUSION:

Ultrasonography is a better choice for initial evaluation and identification in patient with uterine fibromyomas and infertility, becouse it is widely available, relatively cheaper than other imaging ivestigation modalities and is noninvasive as compared with other modalities. Leiomyomas are highly prevalent and vary by age and race with an incidence in females of every age group but increase with increased age. Fibroids in pregnancy are also very common. The impact of uterine fibroid on fertility depends on their type, size and location. Most commonly with high impact factor submucosal fibroid impede implantation and cause infertility. Myomectomy improves fertility outcomes and recommended for females want to conceive relation of intramural fibroids with infertility is controversial it may and may not impact on fertility depends on their interface with an endometrial cavity if it invades endometrial cavity may cause infertility and if cavity is intact than there is no impact on fertility. The subserosal fibroids don't impact on fertility.

Recommendation

Various techniques of diagnosis and therapy are applicable and applied in gynaecological medical education. Realistic research project on invasive and non-invasive UF treatment methods for their type should be carried out

REFERENCES:

1. Katarina Englund, Agneta Blanck, Inger Gustavsson, Ulrika Lundkvist, Peter Sjöblom, Allan Norgren, Bo Lindblom; "Sex Steroid Receptors in Human Myometrium and Fibroids: Changes during the Menstrual Cycle and Gonadotropin-Releasing Hormone Treatment"; The Journal of Clinical Endocrinology & Metabolism; 1998; Vol-83, Iss-11, pp. 4092-4096
2. Erica E.Marsh, Serdar E.Bulun; "Steroid Hormones and Leiomyomas"; Obstetrics and Gynecology Clinics of North America; 2006; Vol-33, Iss-1, pp. 59-67
3. Belina Carranza-Mamane, Sherbrooke, Jon Havelock, Vancouver BC, Robert Hemmings, Montreal; "The Management of Uterine Fibroids in Women With Otherwise Unexplained Infertility"; SOGC Clinical Practice Guideline; 2015; No-321, pp. 2787-285
4. Mario Marugo Michele Centonze Donatella Bernasconi Laura Fazzuoli Silvia Berta Giulio Giordano; "Estrogen and Progesterone Receptors in Uterine Leiomyomas"; Acta Obstetricia et Gynecologica; 1989; Vol-68, Iss-8, pp. 731-735
5. Serdar E. Bulun; "Uterine Fibroids"; The New England Journal of Medicine; 2013; Vol-369(14), pp. 1344-1355
6. Osamu Yoshino, Osamu Nishii, Yutaka Osuga, Hisanori Asada, Shigeo Okuda, Makoto Orisaka, Masaaki Hori, Toshihiro Fujiwara, Toshihiko Hayashi; "Myomectomy decreases abnormal uterine peristalsis and increases pregnancy rate"; The Journal of Minimally Invasive Gynecology; 2012; Vol-19, Iss-1, pp. 63-67
7. Heather Cook, Mohammad Ezzati, James H. Segars, Desiree McCarthy; "The Impact of Uterine Leiomyomas on Reproductive Outcomes"; Minerva Ginecol.; 2010; 62(3), pp. 225–236
8. Belina Carranza-Mamane, Sherbrooke, Jon Havelock, Vancouver BC, Robert Hemmings, Montreal; "The Management of Uterine Fibroids in Women With Otherwise Unexplained Infertility"; SOGC Clinical Practice Guideline; 2015; No-321, pp. 2787-285
9. Katarina Englund, Agneta Blanck, Inger Gustavsson, Ulrika Lundkvist, Peter Sjöblom, Allan Norgren, Bo Lindblom; "Sex Steroid Receptors in Human Myometrium and Fibroids: Changes during the Menstrual Cycle and Gonadotropin-Releasing Hormone Treatment"; The Journal of Clinical Endocrinology & Metabolism; 1998; Vol-83, Iss-11, pp. 4092-4096
10. Edward E.Wallach, Veasy C.Buttram, Robert C.Reiter; "Uterine leiomyomata: etiology, symptomatology, and management"; Fertility and Sterility; 1981; Vol-36, Iss-4, pp. 433-445
11. Beth W Rackow, Hugh S Taylor; "Submucosal uterine leiomyomas have a global effect on molecular determinants of endometrial receptivity"; Fertility and Sterility; 2010; Vol-93, Iss-6, pp. 2027-2034
12. Aki Kido, Susan M Ascher, Keiko Kishimoto, Winnie Hahn, Reena C Jha, Kaori Togashi, James B Spies; "Comparison of uterine peristalsis before and after uterine artery embolization at 3-T MRI"; AJR Am J Roentgenology; 2011; Vol-196, No-6, pp. 1431-1435
13. Maria Luisa Casini, Federica Rossi, Riccardo Agostini, Vittorio Unfer; "Effects of the position of fibroids on fertility"; Gynecological Endocrinology; 2006; Vol-22, Iss-2, pp. 106-109
14. [18] R D Mashal, M L Fejzo, A J Friedman, N Mitchner, R A Nowak, M S Rein, C C Morton, J Sklar; "Analysis of androgen receptor DNA reveals the independent clonal origins of uterine leiomyomata and the secondary nature of

cytogenetic aberrations in the development of leiomyomata"; Genes Chromosomes Cancer; 1994; Vol-11, Iss-1, pp. 1-6
15. L Deligdish, M Loewenthal; "Endometrial changes associated with myomata of the uterus"; Journal of Clinical Pathology; 1970; Vol-23, Iss-8, pp. 676-680
16. Elizabeth A Stewart; "Uterine fibroids"; The Lancet; 2001; Vol-357, Iss-9252, pp. 293-298
17. Oksana H. Baltarowich, Alfred B. Kurtz, Rebecca G. Pennell, Laurence Needleman, Maria M. Vilaro, Barry B. Goldberg; "Pitfalls in the Sonographic Diagnosis of Uterine Fibroids"; American Journal of Roentgenology; 1988; Vol-151, Iss-4, pp. 725-728
18. Sabrina Q. Rashid, Yi-Hong Chou, Chui-Mei Tiu; "Ultrasonography of Uterine Leiomyomas"; Journal of Medical Ultrasound; 2016; Vol-24, Iss-1, pp. 3-12
19. Mary Graham, Peter L. Cooperberg; "Ultrasound diagnosis of interstitial pregnancy: findings and pitfalls"; Journal of Clinical Ultrasound; 1979; Vol-7, Iss-6, pp. 433-437
20. V Persaud, P D Arjoon; "Uterine leiomyoma. Incidence of degenerative change and a correlation of associated symptoms"; Journal of Clinical Ultrasound; 1970; Vol-35(3), pp. 432-6
21. David L. Olive, Elizabeth A. Pritts,; "Fibroids and Reproduction"; Seminars In Reproductive Medicine; 2010; Vol-28, Num-3, pp. 218-227
22. Fascilla FD, Cramarossa P, Cannone R, Olivieri C, Vimercati A, Exacoustos C; "Ultrasound diagnosis of uterine myomas"; Minerva Ginecologica; 2016; Vol-68(3), pp. 297-312
23. Barbara S. Levy; "Modern management of uterine fibroids"; Acta Obstetricia et Gynecologica; 2008; DOI: 10.1080/00016340802146912, 87: pp. 812-823
24. P. Gambadauro; "Dealing with uterine fibroids in reproductive medicine"; Journal of Obstetrics and Gynaecology; 2012; DOI: 10.3109/01443615.2011.644357, 32: pp. 210–216
25. Marek Lisiecki, Maciej Paszkowski, Sławomir Woźniak; "Fertility impairment associated with uterine fibroids – a review of literature"; Menopause Review/Przegląd Menopauzalny; 2017; DOI: https://doi.org/10.5114/pm.2017.72759, 16(4): pp. 137-140
26. Elizabeth A. Pritts, William H. Parker,David L. Olive; "Fibroids and infertility: an updated systematic review of the evidence"; American Society for Reproductive Medicine; 2009; Vol. 91, No. 4, pp. 1215-1223
27. Ayman Al-Hendy, Evan Robert Myers, Elizabeth Stewart; "Uterine Fibroids: Burden and Unmet Medical Need"; Seminars in Reproductive Medicine; 2017; Vol-35, No-6, pp. 473–480
28. Fabio Parazzini, Dr. Luca Tozzi, Stefano Bianchi; "Pregnancy outcome and uterine fibroids"; Best Practice & Research Clinical Obstetrics & Gynaecology; 2015; DOI: 10.1016/j.bpobgyn.2015.11.017, pp. 1-26
29. Sotirios H. Saravelos, Junhao Yan, Hassan Rehmani, Tin-Chiu Li; "The prevalence and impact of fibroids and their treatment on the outcome of pregnancy in women with recurrent miscarriage"; Human Reproduction Update; 2011; Vol-26, No-12, pp. 3274–3279
30. Ertan Saridogan & Alfred Cutner; "Endoscopic management of uterine fibroids"; Informa Healthcare Human Fertility; 2006; Vol-9(4), pp. 201 – 208
31. Giovanna Tropeano, Sonia Amoroso and Giovanni Scambia; "Non-surgical management of uterine fibroids"; Human Reproduction Update; 2008; Vol-14, No-3, pp. 259–274
32. William H. Parker; "Etiology, symptomatology, and diagnosis of uterine myomas"; American Society for Reproductive Medicine; 2007; Vol-87, No-4, pp.725-736
33. Ben Kroon, Neil Johnson, Michael Chapman, Anusch Yazdani, Roger Hart; "Fibroids in infertility – consensus statement from ACCEPT"; Australian and New Zealand Journal of Obstetrics and Gynaecology; 2011; Vol-51, pp. 289–295
34. Pankaj Desai, Purvi Patel; "Fibroids, Infertility and Laparoscopic Myomectomy"; Journal of Gynecological Endoscopy and Surgery; 2011; Vol-2, Issue-1, pp. 36-42
35. Andrew W. Horne, Hilary O.D. Critchley; "The Effect of Uterine Fibroids on Embryo Implantation"; Seminars In Reproductive Medicine; 2007; Vol-25, Num-6, pp. 483-489
36. C. Benecke, T.F. Kruger, T.I. Siebert, J.P. Van der Merwe, D.W. Steyn; "Effect of Fibroids on Fertility in Patients Undergoing Assisted Reproduction"; Gynecol Obstet Invest; 2005; DOI: 10.1159/000084513, 59: pp. 225–230
37. Rachel M. Whynott, Kamaria C. Cayton Vaught, James H. Segars; "The Effect of Uterine Fibroids on Infertility: A Systematic Review"; Seminars in Reproductive Medicine; 2017; Vol-35, Num-6, pp. 523-532
38. Barbara S. Levy; "Modern management of uterine fibroids"; Acta Obstetricia et Gynecologica; 2008; DOI: 10.1080/00016340802146912, 87: pp. 812-823

39. Tariqu Salman, Colin Davis; "Uterine fibroids, management and effect on fertility"; Current Opinion in Obstetrics and Gynecology ; 2010; DOI:10.1097/GCO.0b013e32833d3606, 22: pp. 295–303
40. Elizabeth A. Stewart, Wanda K. Nicholson, Linda Bradley, Bijan J. Borah; "The Burden of Uterine Fibroids for African-American Women: Results of a National Survey"; Journal Of Women's Health; 2013; Vol-22, Num-10, pp. 807-816
41. Bijan J. Borah, Wanda K. Nicholson, Linda Bradley, Elizabeth A. Stewart; "The impact of uterine leiomyomas: a national survey of affected women"; American Journal of Obstetrics & Gynecology; 2013; DOI:10.1016/j.ajog.2013.07.017, 209: pp. 319.e1-20
42. Javier Monleón, Alicia Martínez-Varea, Daniela Galliano, and Antonio Pellicer; "Successful Pregnancy after Treatment with Ulipristal Acetate for Uterine Fibroids"; Hindawi Publishing Corporation; 2014; Vol-2014, dx.doi.org/10.1155/2014/314587, pp. 1-3
43. David L. Olive, Elizabeth A. Pritts,; "Fibroids and Reproduction"; Seminars In Reproductive Medicine; 2010; Vol-28, Num-3, pp. 218-227
44. M. David, T. Kröncke; "Uterine Fibroid Embolisation – Potential Impact on Fertility and Pregnancy Outcome"; Geburtsh Frauenheilk ; 2013; DOI:10.1055/s-0032-1328318, 73: pp. 247–255
45. Aamir T Khan, Manjeet Shehmar, Janesh K Gupta; "Uterine fibroids: current perspectives"; International Journal of Women's Health; 2014; Vol-20, No. 14:6, pp. 95-114
46. E. Somigliana, P. Vercellini, R. Daguati, R. Pasin, O. De Giorgi and P.G. Crosignani; "Fibroids and female reproduction: a critical analysis of the evidence"; Human Reproduction Update; 2007; Vol-13, No-5, pp. 465–476
47. Leonidas I. Zepiridis, Grigoris F. Grimbizis, Basil C. Tarlatzis; "Infertility and Uterine Fibroids"; Best Practice & Research Clinical Obstetrics & Gynaecology; 2015; S1521-6934(15)00235-7, pp. 1-16
48. P. Purohit, K. Vigneswaran; "Fibroids and Infertility"; Curr Obstet Gynecol Rep; 2016; DOI 10.1007/s13669-016-0162-2, pp. 81-88
49. Aradhana Khaund, Aradhana Khaund; "Impact of fibroids on reproductive function"; Best Practice & Research Clinical Obstetrics and Gynaecology; 2008; Vol-22, No-4, pp. 749–760
50. Neelanjana Mukhopadhaya, Grace Pokuah Asante, Isaac T Manyonda; "Uterine fibroids: impact on fertility and pregnancy loss"; Obstetrics, Gynaecology and Reproductive Medicine ; 2007; 17:11, pp. 311-317.