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Rs 15

PCOS: THINK TWICE BEFORE **GOING UNDER KNIFE**

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PCOS IS A SYNDROME
NOT DISEASE. SO, YOU
CAN ONLY MANAGE IT!



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Mail Box

Dear Sir,

I was recently diagnosed for PCOS and the doctor suggested surgery. It was then I read the article in your last issue. I never knew that there were other solutions to PCOS and surgery should only be the last option. Thanks a ton for opening my eyes.

Nithya Haridas
Adyar
Chennai

Dear Sir,

The articles on PCOS in the last issue were very informative and helpful. PCOS has been a constant source of worry for me because I've a family history. The articles created greater awareness in me and as a mother now I know that I shouldn't take it easily if my two young daughters suffer from irregular menstrual cycles. Thank you and keep up the good work.

Rohini Iyer
Mambalam
Chennai

Dear Sir,

I read the last issue with lots of interest, because, it pertained to female fertility issues. I'm a graduate and indulge in a fair amount of reading. Despite this, I had no idea about PCOS. In fact, I have all the symptoms of PCOS mentioned in the article. Now that I know it is a disorder, I am losing no time in rushing to a doctor. I consider myself lucky because I came to know about PCOS before marriage. Thank you for your excellent work.

Sheela K Abraham
Sulur
Coimbatore



Editor's Desk



Dear Reader,

I hope you enjoyed reading our last issue on female fertility issues. This issue is exclusively dedicated to Polycystic Ovarian Syndrome (PCOS). We decided to make it a PCOS Special in an effort to create greater awareness among people.

It's an undeniable fact that the number of women with PCOS is on the rise globally, and particularly in our country. Yet, this disorder is riddled with myths and misconceptions and not understood in an orderly manner!

For instance, a woman with PCOS is often seen as infertile which is totally wrong. She can only be called subfertile. It means she can also succeed in achieving pregnancy like any other normal woman despite some initial hiccups.

We've also often seen women with PCOS rushing to get surgical solution. Is it the right thing to do? We don't think so. We believe that surgery should be the very last option and should be resorted to only when other treatment modalities fail.

Many people even see and project PCOS as a disease and search for a total cure. This is again wrong. PCOS is only a syndrome and unfortunately there is no cure to this disorder. However, it can be tackled through effective management.

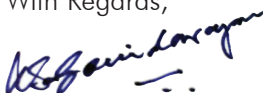
PCOS is emerging as a major health hazard for women in our society though we don't have comprehensive national survey and an accurate data to determine its incidence rate.

However, independent surveys done in various parts of the country suggest that the disorder is panning out in a bigger way than we can conceive. This being the fact, our people, especially women, need greater awareness.

We believe that first and foremost step in dealing with a disorder of this kind is to create greater understanding and awareness among the target audience. And, that's what we've done here, talking about the disorder loud and clear.

Meanwhile, let me advise you to lead a healthy lifestyle by eating right and exercising well and saying 'no' to tobacco and alcohol. If you still feel thirsty, do drink a glass of pure, purified cold water. It's refreshing and also good for health!

With Regards,



Dr.K.S.Govindarajan
Editor-in-Chief

PCOS IS A SYNDROME NOT DISEASE. SO, YOU **CAN ONLY MANAGE IT!**

SOME STUDIES PUT PCOS INCIDENCE RATE IN THE COUNTRY AT 22 PER CENT WHILE OTHERS PEG IT AT 10 TO 18 PER CENT. BUT CONSIDERING THE RAPIDITY WITH WHICH THE INCIDENCE OF OBESITY AND DIABETES IS INCREASING IN THE COUNTRY, IT WOULD BE SAFE TO ASSUME A FIGURE OF 15 PER CENT



Polycystic Ovarian Syndrome (PCOS) is emerging as a major health threat for women across the globe. The situation in our country is not any different. The most saddening thing, however, is that the society is still lacking in awareness about this condition though 15 long years have passed since the first international conference on PCOS was held at

National Institutes of Health (NIH) in Bethesda, MD to arrive at an accurate diagnostic criteria.

"Many people still don't know what PCOS is all about. But some people do know about it but only to the extent that such a condition exists," laments Dr. Ramya Jayaram, Consultant (Reproductive Medicine), Womens Center. She adds that the first

step towards fighting this condition lies in raising awareness levels among the masses, both in women and men.

So, what is PCOS after all? “Medically speaking, it’s a condition in which small follicles in the ovaries don’t develop into larger mature follicles,” elaborates Dr.Ramya. To put in a lay man’s language, a follicle is a fluid-filled sac found in the ovary in the female reproductive system which contains an immature egg or oocyte.

As matter of fact, several follicles begin to develop in women during each menstrual cycle. However, in normal situation, only one follicle will discharge an egg while other follicles which do not release a mature egg will disintegrate by themselves eventually. Hence, in women affected by PCOS the small follicles are not able to discharge eggs because of their fail-

PCOS SYMPTOMS

- Women with PCOS may miss periods or have fewer periods (fewer than eight in a year or their periods may come 21 days or more often. Some women with PCOS stop having menstrual periods.
- Too much of hair on the face, chin or parts of the body where men usually have hair. This condition known as hirsutism affects up to 70 per cent of women with PCOS
- Acne on the face, chest and upper back
- Thinning hair or hair loss on the scalp or male-pattern baldness
- Weight gain or difficulty in losing weight
- Darkening of skin particularly along the neck creases, in the groin and underneath breasts
- Skin tags which are small excess flaps of skin in the armpits or neck area



PCOS WOMEN MIGHT HAVE DIFFICULTY IN CONCEIVING. BUT, TO SAY THEY CAN’T IS AN ABSOLUTE MYTH, BECAUSE, PCOS IS A CONDITION OF SUBFERTILITY NOT

INFERTILITY. THESE DAYS MANY PEOPLE USE SUBFERTILITY AND INFERTILITY INTERCHANGEABLY. ACTUALLY SPEAKING, THERE IS A DIFFERENCE BETWEEN THE TWO. SUBFERTILITY MEANS DECREASED FERTILITY OR DECREASED CHANCE OF GETTING PREGNANT, BUT NOT A COMPLETE INABILITY TO GET PREGNANT ”

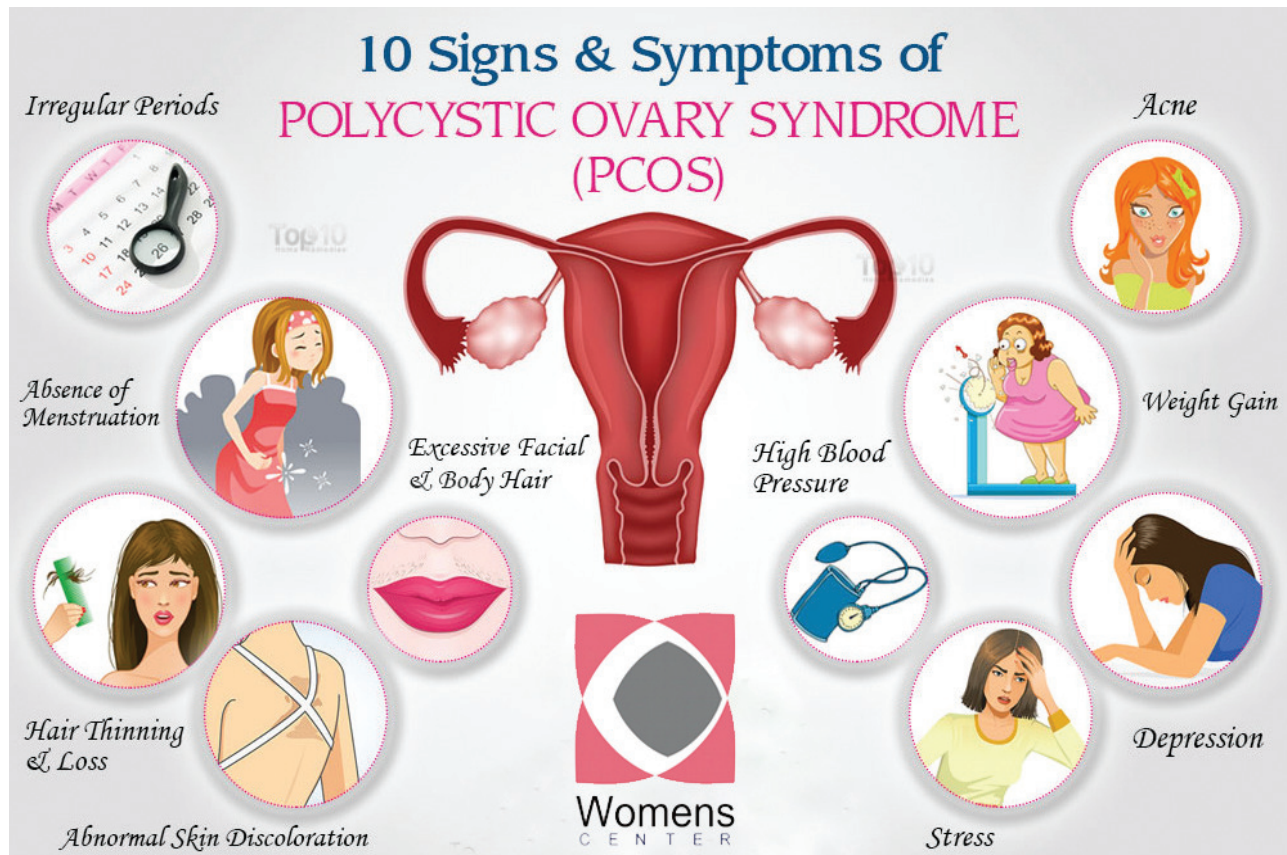
– Dr.Ramya Jayaram, Consultant
(Reproductive Medicine),
Womens Center

ure to develop into larger, mature ones. In medical lexicon, it is known as anovulation or absence of ovulation. “And, as we all know no pregnancy is possible without the union of egg and sperm,” Dr.Ramya explains.

So, what is the factor which prevents the maturation or rather development of follicles in a PCOS victim? An answer to this question leads one to the role that sex hormones, namely, estrogen and progesterone, play in making a successful pregnancy possible. The sex hormones need to maintain a healthy balance. But, in a PCOS victim, as Dr.Ramya explains they are thrown out of balance. This imbalance or disharmony, which defines PCOS, results in ovarian enlargement and changes that appear like small cysts in the ovary.

It is these changes associated with the disharmony of the sex hormones which manifest themselves in the form of hirsutism (excessive growth of facial or body hair), irregular or erratic menstrual cycle, acne or obesity. It is true that PCOS victims have difficulty in conceiving. But, that does not mean they suffer from infertility.

“PCOS women might have difficulty in conceiving. But, to say they can’t is an absolute myth, because, PCOS is a condition of subfertility not infertility,” confirms Dr. Ramya. These days many people use subfer-



tility and infertility interchangeably. But actually speaking there is a difference between the two. Subfertility means decreased fertility or decreased chance of getting pregnant, but not a complete inability to get pregnant.

"Someone who's described as subfertile still has a good chance of getting pregnant on her own, but it may take longer than others. But in the case of infertility, the person is unlikely to get pregnant without medical help," Dr.Ramya explains.

But is PCOS as severe and widespread as is being projected now? It is not only widespread but also emerging as one of the biggest threats to women's health says Dr.Ramya. She hastens to add: "Of course, we lack an accurate nation-wide survey and hence fixing the incidence rate is a hazardous task. But, various studies done in different parts of the country indicate that PCOS incidence rate in women of child-bearing age is quite high.

Some studies put the figure at 22 per cent of the total population while a few other studies peg it at 10 to 18 per cent. However, it would be safe to assume a figure of 15 per cent considering the phenomenally increasing incidence of obesity and diabetes in the country whose population has witnessed massive lifestyle alternations, particularly, during the last two decades.

IN WOMEN AFFECTED BY PCOS THE SMALL FOLLICLES ARE NOT ABLE TO DISCHARGE EGGS BECAUSE OF THEIR FAILURE TO DEVELOP INTO LARGER, MATURE ONES. IN MEDICAL LEXICON, IT IS KNOWN AS ANOVULATION OR ABSENCE OF OVULATION. AND, AS WE ALL KNOW NO PREGNANCY IS POSSIBLE WITHOUT THE UNION OF EGG AND SPERM

So, how can we tackle the PCOS menace? "To tackle a problem, we need to understand it properly. It's all the more so in the case of PCOS. There is now an increasing tendency to project it as a deadly disease which is totally wrong. So, we should first understand that it is only a syndrome and not a disease," says Clinical Director, Womens Center, Dr.Mirudhubashini Govindarajan. In other words, it means that there is no cure for PCOS. "But, it can be managed beautifully well with an early diagnosis and appropriate treatment based on individual needs," adds Dr. Mirudhubashini.

TAKE TO YOGA FOR BETTER MANAGEMENT OF PCOS

Polycystic Ovarian Syndrome (PCOS) has emerged as a common disorder. Several studies reveal that at least 50 per cent women with PCOS are overweight or obese. Studies have also revealed that women with PCOS also tend to develop mental health issues like anxiety or depression. So, it is important for women with PCOS to follow a healthy lifestyle by eating the right food and exercising regularly. Yoga is highly recommended for PCOS victims because it works at levels much more subtler and deeper than just the physical body level. Yoga also helps release deeply

stored stress in the system. Yoga has some postures designed for women with PCOS. These asanas help in opening up the pelvic area and promote relaxation. This coupled with pranayama will help in calming down the mind. Relaxation is the key in PCOS and one should relax in the asana coordinating with breathing. Experts say that yoga and meditation bring in relaxation and put the mind at ease from the stress associated with weight gain which in turn results in the regularization of monthly cycles. The following postures will help women with PCOS:

BUTTERFLY POSE



It is a very helpful posture for women with PCOS. However, instead of flapping the legs too much, one should try holding the posture for long.

SUPTA BADHAKONASANA

This is much more helpful and powerful than the Butterfly Pose. Women with PCOS will find it extremely relaxing. One can try playing soft music or placing cushions under the hip to enhance the experience.



PADMA SADHANA

Practice of Padma Sadhana is also considered very effective for women with PCOS. It would also be a good idea to do a few rounds of Sun Salutation for achieving weight loss.



CHAKKI CHALASANA

This posture works like a moving grinding wheel and is very simple to do but has several benefits. This posture helps massage liver, kidneys, pancreas, uterus and reproductive organs.

BHARADVAJASANA

This posture gives the hip, spine and shoulders a good stretch. It massages abdominal organs and improves digestion and metabolism. It also reduces stress and anxiety.



SHAVASANA

Women with PCOS will feel better the more they relax and the best yoga posture for relaxation is Shavasana. This posture releases stress, fatigue, depression and tension and it is also an excellent remedy for insomnia.



(Caution: All asanas should be carried out at a professional yoga class under the guidance of a certified teacher. Women with PCOS must not try postures which put extreme pressure on abdomen)

PCOS: ANTIQUITY IN



HIPPOCRATES (460 BC – 377 BC) NOTES THAT: “BUT THOSE WOMEN WHOSE MENSTRUATION IS LESS THAN THREE DAYS OR IS MEAGER, ARE ROBUST, WITH A HEALTHY COMPLEXION AND A MASCULINE APPEARANCE; YET THEY ARE NOT CONCERNED ABOUT BEARING CHILDREN NOR DO THEY BECOME PREGNANT.”

Polycystic Ovarian Syndrome (PCOS) first described in 1935 by American gynaecologists Irving F. Stein, Sr. and Michael L. Leventhal who associated the presence of ovarian cysts with anovulation is generally perceived as a disorder of recent development. Most people see it as a consequence of rising metabolic stress in an increasingly obese society. The syndrome, however, appears to be an ancient disorder, according to some experts. This observation will surprise many because it naturally brings in a difficult question: If it is an ancient disorder, how did it manage to persist despite reproductive disadvantage? We will look into that question and find an answer in due course.

So, let us first examine how ancient is this disorder. The Egyptian papyri do not say much about the antiquity of PCOS. However, later ancient medical records do provide us with definite clues.

Hippocrates (460 BC – 377 BC) notes that: “But those women whose menstruation is less than three days or is meager, are robust, with a healthy complexion and a masculine appearance; yet they are not concerned about bearing children nor do they become pregnant.”

Soranus of Ephesus (98-138 AD) notes:

“Sometimes it is also natural not to menstruate at all. It is natural too in persons whose bodies are of a masculine type. We observe that majority of those not menstruating are rather robust, like mannish and sterile women.”

The medieval physician Moises Maimonides (1135-1204 AD) notes: “There are women whose skin is dry and hard and whose nature resembles the nature of man, this does not arise from medications, but is caused by heavy menstrual activity.”

In a direct reference the celebrated renaissance surgeon and obstetrician Ambroise Pare (1510-1590 AD) observed that many women, when their menstruation cycle stopped, degenerated after a manner into a certain manly nature. They are called Viragines meaning stout or manly women, Ambroise noted, adding that “their voice is loud and big and like men they too become bearded.”

If you dig deeper into the terminology Viragines, you will stumble upon certain interesting and equally stunning findings. First, you will find that it is a combination of two words *Vir* and *Gen*. The word *Vir* is the shorter form of *Viril* from Middle French from which the word *Virile* – meaning marked by manly force - is derived. Whereas the word *Gene* has both French

EPIC PROPORTION

and Greek connection and in the modern day it is used to mean thing that produces or causes, race, family or generation.

So, the combination of *Vir* and *Genes* (Virajines) in the context of PCOS basically could mean a generation of women marked by manly force. The combining words which make Virajines, not very surprisingly, also have an Indian connection. For, the prefix *Vir* and the suffix *Genes* have their roots in the Sanskrit words *Virah* (manly or hero) and *Jan* (people or generation) respectively.

The Indian connection of Virajines does not end here. For, Mahabharata – the Indian epic – positions Viraj as the mythical primeval being associated with creation and personifies him as the secondary creator. It also describes Viraj as Purusha who in turn is identified with Vishnu and Lord Shiva. Manu Smriti states that Brahma divided Purusha's body into two; one male and the other female and from the female was born Viraj. So, it is aptly described that Viraj is born from Purusha and Purusha in turn is born from Viraj.

The surfacing of the word Virajines, which has strong Indian roots, in France where Ambroise served as the barber surgeon for kings Henry II, Francis II, Charles IX and Henry III is not surprising considering the close link between Sanskrit and European languages. However, it would not be totally wrong to take the stories appearing in Mahabharata and Manu Smriti as a definite indication of the masculine characteristics of Viraj - the female who in her original form is Purusha and hence a male before Brahma decided to divide her body into male and female parts.

So, piecing together the observations made by Hippocrates to Ambroise Pare and the etymological connection alongside the stories which appear in Indian puranas, we can safely assume that PCOS is a much more ancient disorder than what we think! This assumption gains greater significance in the backdrop of a study conducted towards determining the global prevalence of PCOS between the races.

The study found strikingly similar prevalence of PCOS as defined by NIH 1990 criteria ranging from 6 to 9 per cent among the people of United States,

THE COMBINING WORDS WHICH MAKE VIRAJINES, NOT VERY SURPRISINGLY, ALSO HAVE AN INDIAN CONNECTION. FOR, THE PREFIX *VIR* AND THE SUFFIX *GENES* HAVE THEIR ROOTS IN THE SANSKRIT WORDS *VIRAH* (MANLY OR HERO) AND *JAN* (PEOPLE OR GENERATION) RESPECTIVELY

the United Kingdom, Spain, Greece, Australia and Mexico. Admitting that many populations still needed to be studied, the study, however, concluded that PCOS quite possibly would have emerged earlier than the onset of racial diversity considering the fact that humans migrated from Africa about 50,000 years ago.

That takes us back to the original question: If it is an ancient disorder, how did it manage to persist despite reproductive disadvantage? Experts are of the opinion that the origins of PCOS began in Paleolithic hunter-gatherer communities when the condition was an evolutionary advantage. The study says that among the nomadic hunters it would have been advantageous and even

necessary for women to space childbirth as they could generally carry and care for only one young child at a time. Childbirth-related complications were an important cause of mortality in reproductive aged-women in those days and hence a lower parity reduced death rate and the risks of progeny abandonment. The study further notes that lower fertility of women could have also created a rearing advantage for their progeny with fewer children receiving a greater amount of available food and protection. Experts opine that PCOS genotype could survive even the Neolithic revolution when communities started to be sedentary because of its robustness, with some gene variants over the years, as well shown by the heterogeneity of PCOS phenotypes and genotypes.

Currently, researchers continue to search for new ways to treat this disorder focusing on genetics and PCOS, environmental exposure and PCOS risk, ethnic and racial differences in PCOS symptoms, medicines and supplements to restart ovulation, obesity's link to PCOS and health risks of children born to women with PCOS. Researchers, of course, know that they are dealing with a disorder which has travelled down to the present from the distant eons of time. They also know that it is always a challenge to deal with something that has persisted through ages stubborn as a bull. Let us hope, they succeed soon in taming this snorting bull!



PCOS: THINK TWICE BEFORE GOING UNDER KNIFE



OVARIAN DRILLING IS PASSÉ. IT'S BETTER NOT TO SUBJECT YOURSELF TO SUCH A SURGERY AND END UP WITH A BURNT OVARY. WHERE IS THE NEED FOR A SUR-

GERY WHEN THERE ARE OTHER METHODS OF TREATMENTS TODAY WHICH ARE HIGHLY EFFECTIVE IN TACKLING THE SYNDROME? ”

— **Dr. Mirudhubashini Govindarajan**,
Clinical Director,
Womens Center

If someone tells you that surgery is the best option for PCOS, then, it is time you turned a deaf ear to such an enlightened suggestion! A physician who has proven competency in treating PCOS and who keeps updating his knowledge in line with the emerging treatment methods will not make such a suggestion. Surgery, though an option should be the very last resort, because, majority women with PCOS will not need it.

"Ovarian drilling is a surgery in which the doctor makes a few holes on the surface of the ovary using lasers or fine needle heated with electricity. But, this method is passé. So, it's better not to subject yourself to such a surgery and end up with a burnt ovary," says Dr. Mirudhubashini Govindarajan, Clinical Director, Womens Center. She further wonders: Where is the need for a surgery when there are other methods of treatments today which are highly effective in tackling the syndrome?

DIAGNOSTIC TOOLS FOR POLYCYSTIC OVARY SYNDROME

NICHD/NIH Criteria (1990)

Hyperandrogenism
Oligo-ovulation/anovulation
Exclusion of other related disorders

ESHRE/ASRM Rotterdam Criteria (2003)

Hyperandrogenism
Oligo-ovulation/anovulation
Polycystic ovaries
Polycystic ovaries

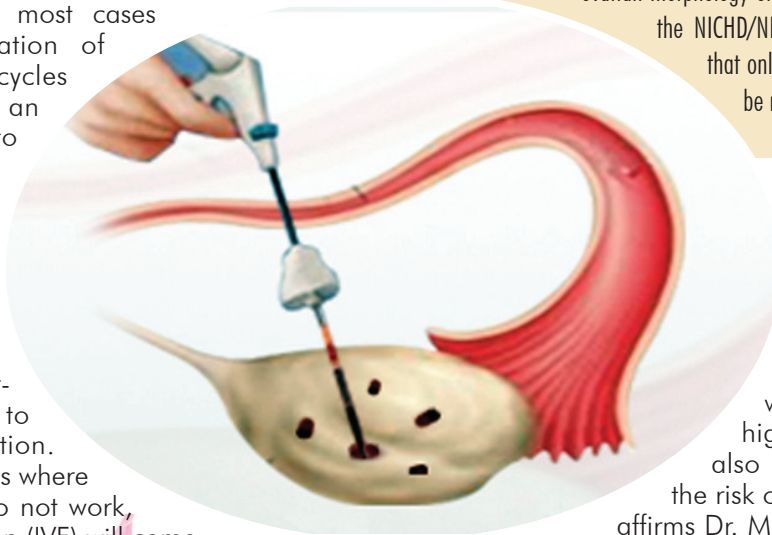
Androgen Excess Society (AES) Criteria (2006)

Hyperandrogenism
Oligo-ovulation/anovulation
Polycystic ovaries
Exclusion of other related disorders

Modified from criteria of the National Institute of Child Health and Human Development (NICHD)/National Institutes of Health (NIH)/European Society of Human Reproduction and Embryology (ESHRE)/American Society for Reproductive Medicine (ASRM).

According to her, though PCOS is not a medically curable condition, it can, however, be effectively managed and the management revolves around controlling the symptoms and preventing the possibility of complications. The first thing is that those affected with PCOS should focus on losing weight if they are obese. They should inculcate the habit of healthy eating which include the intake of right amount of calories. Besides this, they should also have regular physical activities or daily exercise regime. This will help in regulating the menstrual cycle and lower blood glucose levels and improve the chances of pregnancy. Myo inositol/metformin medical therapy can also be used to decrease sugar and insulin levels. Dr. Mirudhubashini is of the opinion that in most cases sheer regularization of menstrual cycles would be an enough step to achieve successful pregnancy.

If someone still fails to achieve pregnancy, there's this option of administering fertility drugs to induce ovulation. However, in cases where the medicines do not work, in vitro fertilization (IVF) will come



PCOS IS PRESENT IN DIFFERENT WAYS IN DIFFERENT AGE GROUPS. AND, NOT ALL INDIVIDUALS CAN BE TREATED THE SAME WAY. THE TREATMENT SHOULD BE TAILORED TO THE NEEDS OF THE PARTICULAR INDIVIDUAL

PCOS - DIAGNOSTIC CRITERIA

The PCOS diagnostic criteria have a history of corrections and revisions. It was in 1990 The National Institute of Child Health and Human Development (NICHD) of the National Institutes of Health (NIH) hosted a panel of experts who developed the first known criteria for PCOS. Over the next decade, it was discovered that ovarian morphology was a key component in the diagnosis. Then, The European Society of Human Reproduction and Embryology (ESHRE) and The American Society for Reproductive Medicine (ASRM) sponsored a workshop in Rotterdam. During the workshop, polycystic ovarian morphology on pelvic ultrasound was added to the NICHD/NIH criteria. It was then decided that only two of the three criteria had to be met for a diagnosis of PCOS.

in handy. In IVF egg is fertilized with the partner's sperm in a laboratory before placing it back in the uterus to implant and develop. "When you compare it with medicines, IVF offers higher pregnancy rate. It also offers better control over the risk of getting twins or triplets," affirms Dr. Mirudhubashini.

However, there is no denying the fact that PCOS is a complex disorder which mandates multiple treatment approaches. "The symptoms may vary from individual to individual and hence the modality of treatment will also vary accordingly," says Dr. Mirudhubashini. For instance, she says birth control pills may be used for those women who do not plan pregnancy towards treating acne, regulating menstrual cycle and lowering levels of male hormones like testosterone in the body.



HOLISTIC MANAGEMENT – THE BEST REMEDY FOR PCOS



ALL THESE DON'T MEAN THAT A WOMAN WITH PCOS SHOULD GET SCARED AT THE THOUGHT OF ACHIEVING PREGNANCY. GREATER AWARENESS WILL HELP EARLY DETECTION OF THE PROBLEM AND APPROPRIATE TREATMENT. IT WILL ALSO PREPARE HER BETTER BY HELPING HER SWITCH TO A HEALTHY LIFESTYLE

— Dr. Mirudhubashini Govindarajan, Clinical Director, Womens Center

It is really not known what exactly causes Polycystic Ovarian Syndrome (PCOS) but most experts think several factors including genetics play a vital role. However, what we know for sure is that PCOS is closely linked to a number of health issues. "In general, people look at PCOS mostly as a fertility issue. Such ignorance can only help in undermining the severity of other health issues related to PCOS. So, we need to have a comprehensive understanding about PCOS," says Dr. Mirudhubashini Govindarajan, Clinical Director, Womens Center.

PCOS certainly can cause missed or irregular periods which in turn can lead to fertility issues including development of cysts in the ovaries. Studies reveal that 5 to 10 per cent of women of childbearing age (between 15 and 44) have PCOS. Yet, most women find it out only in their 20s or 30s

when they have problems getting pregnant. This happens because people tend to dismiss it as a 'problem of the other.' Whereas the fact is that women of all races and ethnicities are at risk of PCOS and the risk of PCOS may be higher in a woman who has a mother, sister or aunt with a history of PCOS.

Besides confronted with fertility issues, many women with PCOS are also found to be obese or overweight. A paper published by National Center for Biotechnology Information (NCBI) confirms that, at least, 50 per cent of women with PCOS are overweight or obese and most of them have the abdominal phenotype. The study further notes: "Obesity, particularly abdominal phenotype, may be partly responsible for insulin resistance and associated hyperinsulinemia in women with PCOS. Therefore, obesity-related hyperinsuline-

mia may play a key role in favouring hyperandrogenism in these women.”

In other words, it means hyperandrogenism – a medical condition characterized by excess levels of androgens (male sex hormones such as testosterone) in the female body is caused because of the vital role that obesity-related hyperinsulinemia plays. Hyperinsulinemia, for better insight, should be understood as a condition which brings about excess levels of insulin circulating in the blood relative to the level of glucose. There are also other mechanisms by which obesity favours the development of hyperandrogenism in PCOS, the study points out. Irrespective of the pathogenic mechanism involved, the study goes to confirm that obese women have more severe hyperandrogenism and related clinical features like hirsutism, irregular periods and anovulation compared to women who maintain healthy weight. This is more pronounced in obese PCOS women with the abdominal phenotype.

Obesity can cause sleep apnea – a condition when momentary and repeated stops in breathing interrupt sleep. Sleep apnea in turn increases the risks of cardiovascular diseases and also diabetes. So, it is not surprising when experts say that more than half of women with PCOS will have diabetes or pre-diabetes (glucose intolerance) before the age of 40 and they are also at greater risk of having high blood pressure compared to women of the same age without PCOS. It has also been noticed that women with PCOS have high levels of LDL (bad) cholesterol and low levels of HDL (good) cholesterol thus making them prone to heart disease and stroke. Depression and anxiety are common in women with PCOS. For, studies show that obesity causes depression and obese people are 25 per cent more likely to experience a mood disorder due to poor self-image, low self-esteem and in some cases social isolation.

Problems with ovulation, obesity, insulin resistance and diabetes are common in women with PCOS. These issues together can put the women with PCOS at greater risk of developing cancer of the endometrium (lining of the uterus or womb). “The risks of PCOS-related health issues increase with age,” asserts

IRRESPECTIVE OF THE PATHOGENIC MECHANISM INVOLVED, THE STUDY GOES TO CONFIRM THAT OBESE WOMEN HAVE MORE SEVERE HYPERANDROGENISM AND RELATED CLINICAL FEATURES LIKE HIRSUTISM, IRREGULAR PERIODS AND ANOVULATION COMPARED TO WOMEN WHO MAINTAIN HEALTHY WEIGHT.

DIAGNOSING PCOS

There is no definitive test for PCOS. The process of diagnosis includes reviewing one’s medical history and symptoms, and tests which include:

- ◆ Measuring blood pressure, body mass index (BMI) and waist size
- ◆ Examination of skin for extra hair on your face, chest or back, acne or discolouration
- ◆ Pelvic examination to rule out enlarged ovaries
- ◆ Blood test to measure hormone levels
- ◆ Lipid level test to assess the amount of cholesterol in blood
- ◆ Thyroid test to determine the amount of thyroid hormones one’s body produces
- ◆ Fast glucose to measure blood sugar levels

PEOPLE TEND TO DISMISS IT AS A ‘PROBLEM OF THE OTHER.’ WHEREAS THE FACT IS THAT WOMEN OF ALL RACES AND ETHNICITIES ARE AT RISK OF PCOS AND THE RISK OF PCOS MAY BE HIGHER IN A WOMAN WHO HAS A MOTHER, SISTER OR AUNT WITH A HISTORY OF PCOS.

Dr. Mirudhubashini stressing the need for greater awareness towards better management of the syndrome.

But, do the symptoms of PCOS go away at menopause? The answer is yes and no, says Dr. Mirudhubashini who informs that many women with PCOS find their menstrual cycles becoming more regular as they get closer to menopause: “But, that does not mean that the PCOS-triggered hormonal imbalance will change with age. So, they may continue to have symptoms of PCOS.”

As mentioned earlier, it is not altogether impossible for women with PCOS to conceive. Yet, upon achieving pregnancy, they may not extra monitoring due to higher possibilities of miscarriage, gestational diabetes, preeclampsia (a condition in pregnancy characterized by high blood pressure) and premature delivery. Besides, the baby also has a higher risk of being heavy (macrosomia) and may need to spend more time in the Neonatal Intensive Care Unit (NICU).

“All these don’t mean that a woman with PCOS should get scared at the thought of achieving pregnancy. Greater awareness will help early detection of the problem and appropriate treatment. It will also prepare her better by helping her switch to a healthy lifestyle,” says Dr. Mirudhubashini.

WHAT IS TRENDING

HOW SPERM SWIM? MATHEMATICAL FORMULA UNRAVELS MYSTERY

Researchers at the Universities of York, Birmingham, Oxford and Kyoto University, Japan, found that the sperm's tail creates a characteristic rhythm that pushes the sperm forward, but also pulls the head backwards and sideways in a coordinated fashion.

Successful fertility relies on how a sperm moves through fluid, but capturing details of this movement is a complicated issue.

The team aims to use these new findings to understand how larger groups of sperm behave and interact, a task that would be impossible using modern observational techniques. The work could provide new insights into treating male infertility.

Dr Hermes Gadêlha, from the University of York's Department of Mathematics, said: "In order to observe, at the microscale, how a sperm achieves forward propulsion through fluid, sophisticated microscopic high precision techniques are currently employed.

"Measurements of the beat of the sperm's tail are fed

into a computer model, which then helps to understand the fluid flow patterns that result from this movement.

"Numerical simulations are used to identify the flow around the sperm, but as the structures of the fluid are so complex, the data is particularly challenging to understand and use. Around 55 million spermatozoa are found in a given sample, so it is understandably very difficult to model how they move simultaneously.

"We wanted to create a mathematical formula that would simplify how we address this problem and make it easier to predict how large numbers of sperm swim. This would help us understand why some sperm succeed and others fail."

By analysing the head and tail movements of the sperm, researchers have now shown that the sperm moves the fluid in a coordinated rhythmic way, which can be captured to form a relatively simple mathematical formula. This means complex and expensive computer simulations are no longer needed to understand how the fluid moves as the sperm swim.

LAUGHTER THERAPY





Innovation with Science

Advetorial

Shield was incorporated in the year 1995, as an ethical marketing company for pharmaceutical products, in India. **Shield** has a strong focus in the segment of women's healthcare, specifically in Gynecology and Infertility space. Since inception Shield had been marketing formulations based on Health and Nutrition with an objective to identify and market niche solutions for gynecological healthcare needs of women, from 'Menarche to Menopause'.

With a vision of becoming the most respected pharma company in India, **Shield** has built a focused portfolio of products that are either homegrown or solutions by working with pharmaceutical innovators across the world. **Shield** collaborates with chosen companies involved in pharmaceutical research, to bring and market in India, healthcare solutions that are innovative and scientific. Through innovation and science we provide effective solutions in issues such as PCOD, Male / Female infertility & Pregnancy, Post-Partum Care and other gynecological health care needs of women.

Key products in our portfolio comprises of:

- **APCOD / APCOD OBIS** – to address PCOD the right BMI way
- **Ovaa Shield** – The Pregnancy Clomiphene
- **Estro G 100** – Effective safe and non estrogen for Menopause
- **GDM Safe** – For safe gestation and safe delivery
- **ZOAMATES** – The ultimate in Male Infertility
- **Art Luton** – For reliable Luteal phase support
- **TOTALIS** – Total bliss from Itch, White Discharge and Odour
- **Lokia Pad** – Superior post-Partum care
- **Jusmile** – Dioxin free sanitary pad to protect women from Menarche to Menopause



Shield has the prescription patronage of top gynecologists, IVF specialists and endocrinologists across the country. Its product introductions have repeatedly acquired recognition and laurels from the industry watchers. With the trust of gynecologists and medical practitioners across the country, **Shield** will continue to provide effective solutions in this space with the ultimate aim of providing healthcare to women from Menarche to Menopause.

Protection from 'Menarche' to 'Menopause'

WE GIVE BIRTH TO MOTHERS. NOT JUST CHILDREN



"The moment a child is born, the mother is also born. She never existed before. The women existed, but the mother never," it's said. That is exactly what happens at Womens Center. For over three decades, it's successfully given birth to hundreds to thousands of healthy mothers and equally healthy children. It has the latest technology, expertise and experience. So get real if you think motherhood is a distant dream. Berth with Womens Center and witness the birth of motherhood in you. It can help find your bundle of joy!



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