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Newsletter

August 2018 | Issue 8

"Breastfeeding and Empowerment"

President's Message

Dear FOGSIans
Greetings!

Greetings, hope each one of you is doing well and in the best of spirits.

Here comes August, it may mean a lot of different things to different people, starting from Sawaan, Janamashtami and Rakshabandhan. To a hard core Obstetrician , it is a month dedicated to Breast feeding and especially the first week of August is dedicated to breastfeeding. Now why is there a need for celebrating this week, we have come a long way and away from breast feeding and with the over medicalization of everything, simple natural bonding of a mother with her child has become an issue, so much so that each mother though wanting to feed her baby is under stress of how to initiate, whether there is adequate supply, whether it will spoil her figure and so on and we obstetricians also need to emphasise enough. In a recent study it was found that only 47% of us initiate breast feeding and most of us do not spend enough time to counsel during pregnancy and many of us also never examine breast during pregnancy. We must remember that we are not only responsible for safe delivery, but we are also responsible for the well being of the baby.

A newborn baby has only three demands. They are warmth in the arms of its mother, food from her breasts, and security in the knowledge of her presence. Breastfeeding satisfies all three.

Grantly Read

Breast in Obstetrics and gynecology is a neglected area, as we are still trying to decide, in whose domain it falls, let me clarify to all that we deal with the problems of half of our population and this half comes to us first for any untoward sign or symptom of anything, we cannot shy away from our duty and educating and guiding them in the right direction is our prime responsibility. Similarly breast cancer has attained the position of major killer cancer in our country and it is one cancer, which if detected early has a reasonably good survival rate. Early detection needs educating the women to do self examination or mammographies wherever required, protocols need to be set for this and awareness created so that the disease burden is reduced and quality of life in these patients is improved. All in all I would request all my colleagues to include breast in their armamentarium and help women in encouraging breast feeding and early detection of breast cancer.

Looking forward to each one contributing towards sensitising women of our country about two major messagesregarding Breast feeding and staying alert towards breast cancer.

Please feel free to interact with me.

Warm regards
Lots of Love
Om Shanti
Jaideep Malhotra

UPCOMING

Current Perspectives Regarding Role of Tumor Markers in Breast Cancer

Shuchi Jain, Neha Gangane, Ketki Thool

Breast cancer is the second most common type of cancer after lung cancer (10.4% of all cancer incidence) and the fifth most common cause of cancer death.

Early detection of breast cancer both primary and recurrent, is of considerable clinical importance, to make treatment decisions while tumor burden is low, and when patients are most likely to respond to adjuvant therapy. Tumor markers provide a minimally invasive cost-effective source for monitoring disease course, determining prognosis, and treatment planning.

The American Society of Clinical Oncology (ASCO) has updated its recommendations for use of tumor markers. Thirteen categories of breast tumor markers were considered.

Carcinoembryonic antigen (CEA): It is a single-chain glycoprotein of 641 amino acids with a molecular mass of 150–300 kDa containing 45–55% carbohydrate CEA proteins. Circulating levels of CEA in breast cancer patients are directly dependable on the size of both primary and metastatic tumor. Sławicki et al. reported that CEA alone is nonspecific for diagnosis of breast cancer. Carcinoembryonic antigen is elevated in 30–50% of patients with symptomatic metastatic breast cancer.

Cancer antigen (CA) 15-3: It belongs to the MUC1 family. The *MUC1* gene is overexpressed in malignant breast tumors. It is more useful in determining the prognosis of breast cancer and to monitor the efficacy of therapy. Darlix et al. reported that serum CA 15-3 level is independent prognostic factor in metastatic breast cancer patients.

Cancer antigen 27.29: It is a carbohydrate-containing protein. It is produced by the *MUC1* gene. CA 27.29 is highly associated with breast cancer, as 80% of women with breast cancer have an increased CA 27-29 levels. Rack et al indicated that there is a close relationship between CA27.29 levels and tumor mass.

Estrogen receptor (ER): In invasive and metastatic disease steroid hormone status will identify patients most likely to benefit from endocrine therapy such as tamoxifen, and raloxifene. Clinically, a positive ER status correlates with favorable prognostic features, including a lower rate of cell proliferation and histological evidence of tumor differentiation and site of gross metastasis.

Progesterone receptor (PR): Loss of PR in ERþ tumors may be a marker of aberrant growth factor signaling that could contribute to the tamoxifen resistance found in the tumors leading to a poorer survival in women treated with tamoxifen.

HER 2 Neu: It amplification or over expression has been shown to be associated with higher tumor grade and poorer prognosis. HER 2 Neu proto-oncogene is amplified and/or over expressed in approximately in 25–30% of invasive primary breast cancers. HER 2 Neu receptor is important target for antibody-based therapy with trastuzumab (Herceptin).

The P53 mutation is associated with more aggressive disease and worse overall survival. Mutant P53 does not function as a tumor suppressor but can also exert tumor promoting effects. Impaired P53 activity promotes the accumulation of DNA damaged cells, which leads to a cancer phenotype.

Plasminogen activating proteins such as urokinase-type plasminogen activator (uPA). High concentrations of plasminogen activator inhibitor-1 (PAI-1) predicted an adverse outcome in node-negative patients. Patients with high uPA and PAI-1 levels benefit from adjuvant chemotherapy. Levels of uPA, PAI-1, and uPAR in breast tumors may be used in routine assessment of prognosis in patients with newly diagnosed breast cancer.

Procathepsin: using the monoclonal antibodies specific for the pro-form, it has been shown that the procathepsin D level increases in plasma of patients with metastatic breast cancer. Also, cathepsin D overexpression was associated with an increased risk of recurrence and death.

Cyclin E is cleaved to lower molecular weight (LMW) fragments, the LMW fragments confer resistance to tamoxifen and increase genomic instability. Elevated levels of cyclin E protein have been consistently associated with poor and increased risk of recurrence.

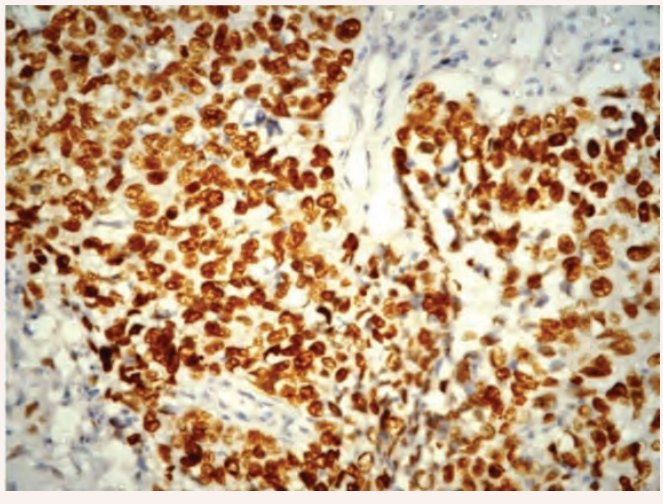


Figure 1: Anti-P53 staining using DAB chromogen showing nuclear stain in >50% of tumour cells scored as 3, nuclear staining detected in >10% tumor cells was taken as positive, (IHC^{x} 200).

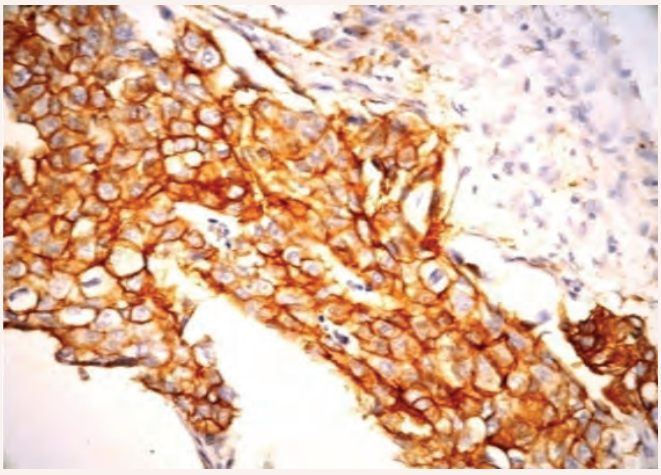


Figure 2: Anti-HER 2 staining using DAB chromogen showing strong complete membrane staining in >10 % of tumor cells scored as 3+ and 2+, 3+ were treated as positive, (IHC× 200).

Nestin is a marker of neural progenitors, in mammary gland. Nestin is a potential biomarker for basal epithelial breast tumor. It is considered as an excellent diagnostic tool for a cancer of regenerative mammary cells.

Human epididymal protein 4 (HE4) is a secretory protein initially identified in epithelial cells of the human epididymis. Galgano et al. reported that HE4 is also expressed in ductal carcinoma of the breast. However, the serum expression levels and their diagnostic and prognostic value in breast cancer remain to be elucidated.

Carcinoembryonic antigen and MUC1 antigen are the most useful serum tumor markers in patients with breast cancer. Serial determination of these markers may be beneficial in monitoring the response to therapy and for early detection of recurrence or metastasis. The main disadvantages of these markers are lack of sensitivity for low-volume disease and lack of specificity. So, they are of no value in either screening or diagnosing early breast cancer. Steroid receptors and HER-2 are tissue-based markers accepted in clinical practice, having the ability to predict the response of the tumor to hormonal therapy. Plasminogen activator inhibitor-1 (PAI-1) and uPA are recently validated as prognostic factors for lymph node-negative breast cancer patients and may be used for selecting those patients who may not need to receive adjuvant chemotherapy. Other markers for breasst cancer such as HE4, p53, cathepsin D, cyclin E and nestin look promising, but further studies are needed before their clinical utility is well-established.

Role of Atosiban in Preterm labor

Dr Vimee Bindra

Preterm birth <34 weeks (early) is associated with majority of neonatal morbidity and mortality and is associated with infection and inflammation. Uterine inflammation activates contractile pathways leading to preterm labor, it is also one of the most common causes of cytokine mediated cerebral injury. Tocolytic drugs suppress preterm labor and have the potential to postpone preterm birth hopefully to improve neonatal outcome. This may be by allowing the normal growth and development of the baby or by allowing time to administer magnesium sulphate for neuroprotection and gaining time for corticosteroid coverage for lung maturity. Atosiban is a nonapeptide, desamino analogue of oxytocin, it's a competitive oxytocin receptor antagonist and is used to reduce uterine contractions in threatened preterm labor. It acts by competing with oxytocin receptors in the myometrium. Currently use of tocolytics is restricted to in due course of 48 hours of glucocorticoid administration and or transfer of the pregnant woman to a centre with neonatal intensive care unit. Routine use of tocolytics in preterm labor is not advocated as they have not shown to reduce the rate of neonatal mortality or morbidity. So maintenance dose of tocolytics is not used even if the tocolytic was used for the reasons mentioned above.

Role of atosiban has been studied in trials, some trials compared atosiban with no treatment and others compared atosiban with betamimetics. In 14 studies which involved 2485 women atosiban resulted in fewer maternal side effects as compared to other tocolytics. The efficacy of nifedipine and atosiban is similar but atosiban is usually first choice as tocolytic as side effects are similar to a placebo as compared to nifedipine which can have some serious maternal adverse effects but atosiban is much more expensive. Atosiban should be the drug of choice for preterm labor specially in patients who are at risk of cardiovascular complications such as multiple pregnancy and heart disease. Also no fetal adverse effects are seen with Atosiban usage, in particular no effect on baseline fetal heart rate.

Few Important Links

- https://en.wikipedia.org/wiki/Breastfeeding
- http://parenting.firstcry.com/articles/most-common-breastfeeding-problems-their-solutions/?ref=SEM_Search_Dynamic_FN_CAT&gclid=EAIaIQobChMIv
- https://www.demystifyinsurance.com/benefits-of-breastfeeding-world-breastfeeding-week/?utm_source=content&utm_medium=search&utm_content=Breast_Feeding_Milk&utm
- https://journals.lww.com/co-obgyn/Abstract/2000/12000/Breastfeeding__benefits,_risks_and_alternatives.11.aspx
- http://swallowingdisorderfoundation.com/swallowing-disorders-in-infants-and-children/
- https://insured.amedadirect.com/stress-impact-breastfeeding/
- https://www.thebump.com/a/top-10-breastfeeding-problems-solved
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1595080/
- https://www.webmd.com/baby/breastfeeding-vs-formula-feeding#1
- https://www.theguardian.com/sustainable-business/breastfeeding-formula-debate-mothers-baby
- https://en.wikipedia.org/wiki/Breast_pump
- https://www.ameda.com/milk-101-article/when-and-how-long-to-pump/
- https://www.youtube.com/watch?v=xWPbykBKEMA
- http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/
- http://www.motherhood101.co.ke/breastfeeding-positions/
- https://www.mom365.com/baby/breastfeeding/our-top-10-breastfeeding-tips
- https://en.wikipedia.org/wiki/Women%27s_empowerment
- https://www.iaspaper.net/women-empowerment-in-india/
- https://www.indiacelebrating.com/speech/women-empowerment-speech/
- http://www.mabooz.com/importance-of-women-empowerment-in-india/

Professor Dr S Sampathkumari

PPIUCD Inserter - Innovation in Postpartum Family Planning - Ready to use PPIUCD

Dr (Ms) Sharad Singh

Dear Friends,

I am happy to share the innovation on postpartum intrauterine contraceptive device (PPIUCD) insertion within 48 hours after normal vaginal delivery is now available for use in India. The traditional IUCD inserter cannot accommodate the shape of a woman's larger postpartum uterus. This new inserter specifically designed for PPIUCD insertion is disposable, long, stiff, yet flexible. The standard IUCD (Cu T 380 A or Cu 375) device with long thread is placed in the long insertion tube and plastic clamp is used to lock the threads which prevent rotation of the IUCD at the time of insertion. It comes in sterile pack and it is "ready to use". As the inserter is sterilized along with the product, no separate sterilization of the insertion tube is required (as is required for the forceps). Availability of ready to use device eliminates the need for specialized instruments as well as the risk for contamination or infection. Thread used in this device is longer than in the traditional IUCD, its visibility allows providers to know that the IUCD is properly placed.

Postpartum intrauterine contraceptive device insertion with this new device is easy and able to place the IUCD close to the fundus. Clinical trial conducted in India proved that fundal placement with the PPIUCD <10 mm was achieved in 82% of the cases. There were no perforations or infections among the participants and no other complications associated with use of this device. This PPIUCD inserter performed as intended and was found to be safe, with high acceptability among the participants and providers.

Pic of PPIUD device

For PPIUCD insertion video please click the following link http://www.pregna.com/ppiud_video.html

Singh S, Das V, Agarwal A, Dewan R, Mittal P, Bhamrah R, et al. A dedicated postpartum intrauterine device inserter: pilot experience and proof of concept. Glob Health Sci Pract. 2016;4(1):132-140. http://dx.doi.org/10.9745/GHSP-D-15-00355.

Newer Markers of Breast Cancer

Dr Rashmi Vyas

There are recent advances in the fields of genomics, tumor biology, and immunology. These give us insights into the heterogeneity between breast tumors, oncogenic factors , and the role of the immune system in the natural history of breast cancer.

This helps to develop new therapeutic strategies using different medicines, targeted drug delivery systems, and immunomodulator agents in the treatment of both the early and metastatic stages of the disease.

This review article is about the major developments in newer markers of breast cancer and how they relate to our understanding of breast cancer and its various biologic subtypes and treatment.

All of these advances, indicate that a tumor is a complex ecosystem composed of tumor cells and also of various immune/stromal/circulatory elements that must be targeted to eradicate established cancer .

Estrogen and Progesterone Receptors

Estrogen receptor (ER)–positive breast cancer is the most prevalent molecular subtype of breast cancer, approximately 60% of all breast cancers are ER positive.

Estrogen receptors can be in the α or β form and can function as either cytosolic proteins that migrate to the nucleus when bound to activate ER-responsive genes or as membrane-bound ERs that can activate a variety of secondary signaling pathways involved in growth and survival.

Most ER-positive breast cancers cluster within the luminal A and luminal B subtypes, with the latter subtype is a higher risk group with resistance to endocrine therapy and worse outcomes.

Recurrent metastatic ER-positive breast cancers either have de novo resistance or develop acquired resistance to endocrine therapy with aromatase inhibitors or tamoxifen . This is because of the activation of various accessory pathways, which allow tumors to escape the effects of estrogen deprivation. Many of the newer strategies seek to block these pathways to prolong the duration of growth suppression in these tumors.

Human Epidermal Growth Factor Receptors

The human epidermal growth factor receptor (HER) family is a critical cell signaling pathway encompassing a family of four surface proteins Human Epidermal Growth factor Receptor/HER1, HER2, HER3, HER4. Oncogenic role of HER2 protein through amplification of the gene is found in approximately 20% of breast cancers by Slamon's group in the late 1980s.

These tumors usually cluster within the molecular subtype known as HER2 enriched with tumors that display a higher level of HER2-activated gene expression responding better to HER2-targeting agents.

This culminated in the development of the anti-HER2 monoclonal antibody trastuzumab for both metastatic and nonmetastatic disease.

Work by scientists such as Erlich and Schrieber has showed how the immune system shapes the evolution of cancer over time and has provided groundwork for the development of cancer immunotherapy.

Antibody-drug conjugates are also under trial which target HER2 receptors in previously treated HER2-positive metastatic breast cancers. New researches are focusing on combination therapies involving these.

Cyclin—dependent Kinase 4 and Cyclin-dependent Kinase 6

Cyclin-dependent kinase 4 (CDK4) and CDK6 are cell cycle regulators that promote cell growth.

The cyclin D-CDK4/6-pRb pathway is commonly dysregulated in hormone receptor (HR)–positive breast cancer, resulting in uncontrolled tumor growth; therefore, this pathway is an attractive target for cancer therapy.

The CDK4/CDK6 inhibitor palbociclib in combination with letrozole, an aromatase inhibitor, received accelerated approval in 2015 as a first-line treatment for metastatic ER-positive, HER2-negative breast cancer.

Two other oral CDK4/6 inhibitors, ribociclib and abemaciclib, also have demonstrated promising results.

Mammalian Target of Rapamycin Protein

Dysregulation of the serine/threonine protein kinase B (PKB) pathway.

Phosphoinositide 3-kinase (PI3K) activates PKB and PKB activates the mammalian target of rapamycin (mTOR) protein. The activation of this pathway is believed to promote cancer cell proliferation and survival. *In vitro* studies of rapamycin, an mTOR inhibitor, in tamoxifen-resistant breast cancer cells demonstrated a dose-dependent restoration of tamoxifen sensitivity. These results encouraged the development of mTOR inhibitors for the treatment of aromatase inhibitor–resistant breast cancer.

DNA DAMAGE MARKERS *BRIK1/ BRIKA2*

Triple-negative breast cancer (TNBC), which constitutes approximately 15% of diagnosed breast cancers, is so named because of its negative staining for estrogen, progesterone, and HER2 receptors.

Unique aspects of these tumors include their association with DNA damage markers, mutations shown in *BRCA1*, *BRCA2* and *p53* (a tumor suppressor) genes, and higher numbers of tumor-infiltrating lymphocytes in comparison with luminal tumors.

The aggressive biology of TNBC and the lack of approved targeted agents have contributed to the difficulty in treating this disease.

Approximately 20% of TNBC have either a somatic or germline *BRCA1* or *BRCA2* mutation. Normal *BRCA1/2* genes are responsible for DNA repair. Cancers with mutations in these *BRCA* genes have defective mechanisms in a major DNA repair pathway, leading to high genomic instability. Some breast tumors exhibit BRCA dysfunction known as "BRCAness."[37]

Poly Adenosine Diphosphate Ribose polymerase (PARP) proteins play a role in DNA repair. Because BRCA-mutated tumors are heavily dependent on PARP for DNA repair, it was postulated that inhibiting PARPs in these tumors would lead to mitotic catastrophe and cell death. Five PARP inhibitors have been developed and are in clinical trials examining the treatment of TNBC with BRCA1/2 mutations or BRCAness.

Olaparib has completed phase two trials as a monotherapy in patients with advanced breast cancer and BRCA1/2 mutations and demonstrated a 41% objective response rate.

T Cell inhibitory receptor – CTLA-4 Cytotoxic T Lymphocyte associated Antigen 4 and Programmed Death Receptors

Immune escape is an important aspect of cancer. Researchers have been focused on treatments to re-engage the host immune system to attack and eradicate established tumors.

Cytotoxic T lymphocyte—associated antigen 4 (CTLA-4) is a T-cell inhibitory receptor expressed on activated CD8+ T lymphocytes. Its role is to attenuate further activation during antigen presentation and to downregulate immune reactions.

The programmed death (PD) receptor is expressed on activated T cells; when it encounters its ligand PD-L1, suppression of T-cell activity occurs in the tumor microenvironment.

For Immunotherapy Antagonistic monoclonal antibodies have been developed to block CTLA-4 and PD-1/PD-L1 activation.

Up to 59% of TNBC tumors can stain positive (>1% cells) for PD-L1. Pembrolizumab is an inhibitor of PD-1 and has completed a phase 1b trial in patients with TNBC.

Another group of drugs Antibody-drug conjugates (ADCs) act through two active domains: the antibody which is specific for a particular tissue or receptor target, and the drug which is cytotoxic . A major benefit of these agents is that they have a high therapeutic index because of their ability to specifically target proteins on the cell surface of cancer cells while sparing normal tissues. These agents have been approved in patients with HER2-positive [(ado-trastuzumab emtansine TDM1)] breast cancer, but is undergoing clinical trials for TNBC.

CONCLUSION

Breast cancer treatment is undergoing a rapid transition from a histology-based approach to one based on the heterogeneous biology of each tumor to optimize outcomes, especially in patients with metastatic disease.

Sequential and/or concurrent combination treatments that are tolerable will be required to overcome the rapid onset of acquired resistance to monotherapies.

Although immunotherapy treatments have shown some promise, only a small number of patients respond. Understanding how to better manipulate the tumor microenvironment and host immune response will be necessary to expand the clinical benefit in relatively less immunogenic tumors such as breast cancer.

As our technology evolves to allow more extensive identification of the key markers for each patient's tumor(s), it will help clinicians in improving outcomes in a value-based manner.

Violence against women

Dr Seema Pandey

Violence against women (VAW), also known as gender-based violence in its semantic form is, violent acts that are primarily or exclusively committed against women.

The WHO defined violence against women in 1993, "any act of gender-based violence that results in, or is likely to result in, physical, sexual, or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty whether occurring in private or public life."

Lots of attention has been given to this issue in recent past, one of the main reason being rising awareness amongst women regarding right and wrong and unacceptance of subjugation and suffering in the name of family and religion. The history of controlling women or considering them as a weaker sex goes a long way and if we refer to our historical backgrounds, women were equal or treated as a treasure only in ancient or Vedic era. Medieval period was the worst part where the conflict of two major cultures lead to the introduction of 'purdah system' and 'child marriage' and domestication of women in various forms. For example, earlier women were free to attend any religious, social, or political meetings but now their place was confined to home and kids. This lead to a patriarchal or male dominated society where men thought of controlling their female partners by any means and this gradually became a regular and accepted practice. Few of the following factors are responsible for increasing discrimination and gender-based violence in our society:

1. Patriarchal or male dominated society
2. Unacceptable social practices
3. Restricted life style or gender discrimination
4. Lack of effective law system.

Types of violence

1. Physical—murder, bride burning
2. Sexual—rape, molestation, abnormal touch, abduction
3. Mental—eve teasing, inequality in education, job and financial matters
4. Domestic violence—mental and physical assault by family members
5. Miscellaneous—sati pratha, devdasi system, childhood marriage, polygamy.

Legal provisions for women—here are few legal acts which help protecting women from various atrocities:

1. Factories act 1948—prevents a woman from working more than 8 hours, only between 6.00 AM to 7 PM
2. Maternity benefit act 1961 here a woman is entitled for minimum of 12 weeks maternity leave
3. Dowry prohibition act 1961—asking for dowry, before, afyer or during marriage is an offensive act
4. The child marriage restrain act of 1976—by which no girl can be married before 18 years and a boy before 21 years

5. The medical termination of pregnancy act of 1971—safeguards against unnecessary and compulsory abortions
6. Indian penal code section 354 and 509 safeguard women's interests
7. Amendments to criminal law 1983—provides a punishment of 5 years in ordinary cases and 10 years in custodial rape cases.

International initiatives to curb gender violence

1. International bill for rights of women- passed in general assembly in 1967
2. International women's decade (1976–1985)—was celebrated and through three key conferences all the agendas were discussed. They considered violence against women as violation of human rights
3. Women: gender equality, development, and peace for 21st century.

National initiatives to curb gender violence

1. National commission for women—1992
2. Reservations for women in local government—1992
3. The national plan of action for the girl child—1991–2000
4. National policy for empowerment of the women—2001
5. National mission for

empowerment of women—2010.

Recommendations

1. Change in the perception of society towards dignity of women and to treat them as equal will abolish majority of domestic violence issues world-wide
2. Awareness about gender biases through various platforms
3. Imparting legal educations in the schools to sensitize them towards their rights and how to fight
4. Motivation of the girls and women specially from poor societies to become independent and self-sufficient
5. Strict implementation of legal procedures without any exception so people start believing in our judiciary system and think before doing it
6. Developing programs and workshop to make girls and women morally stronger so that they don't hide and tolerate any atrocities
7. Setting of family counseling centres which work regularly to motivate and counsel the people regarding these issues and strengthen the family bond
8. Help of media to bring out the cases of injustice and atrocities in public.

Conclusion

Only forceful law and legislature won't stop violence against women or bring the desired change, need is to change our mindset as a society. A social awakening and change in attitude is desired at this stage, so that we don't have to force them to accept woman as an equal but it comes naturally.

मैं नारी हूँ...
नरमदिली और सुन्दरता की प्रतीक
मैं नारी हूँ...
माँ बन दुनिया को एक नया जीवन देने वाली
मैं नारी हूँ...
पत्नी और जीवन संगिनी बन हर मुश्किल से लड़ने वाली
फिर क्यूँ..
तुम बार-बार मेरा अपमान करते हो, कभी सीता कभी अहिल्या की तरह मेरी परीक्षा लेते हो?
क्यूं तुम्हारी वासनाभूत निगाहें मेरा पीक्षा करती हैं...
क्यूं तुम मूझे जन्म लेने से पहले कोख में ही मार डालना चाहते हो?
आखिर क्यूँ???
क्यूँ कि मैं एक नारी हूँ??

Wonder molecule of fertility - vitamin D

Dr Shraddha Agarwal

Vitamin D is a pleotropic molecule which exerts paracrine and endocrine functions mediated by genomic or nongenomic action on multiple target organs. It has been found that vitamin D receptors are present in male and female reproductive organs and play a major role in improving fertility.

Effects on male fertility

Vitamin D regulated protein, CYP24A1 expression in testis serves as marker for vitamin D metabolism in spermatozoa and affects sperm function. Vitamin D receptors are found in testis as well as sperms and activated form of vitamin D increases intracellular Calcium concentration and activates molecular pathways involved in sperm motility, capacitation and acrosome reaction in mature sperms which is essential for fertilization. Vitamin D is responsible for healthy development of nucleus of sperm cells resulting in increased sperm count and also increases level of testosterone resulting in increased libido. Vitamin D also affects inhibin B levels in sertoli cells and leydig cells.

Females

Vitamin D deficiency is also found to increase the risk of uterine myomas, endometriosis and premature ovarian failure (decrease in AMH levels). According to European journal of endocrinology, 2012 vitamin D appears to affect IVF outcomes as well as the level of estrogen and progesterone. It is also associated with increased insulin resistance in obese woman leading to polycystic ovary syndrome. It also increases the risk of PIH and preterm birth.

Systemic metabolism of vitamin D with expression of proteins in target organs.

Vitamin D supplementation

To consistently raise the blood levels of 25(OH)D above 75nmol/L at least 1500–2000 IU/day vitamin D is required. The doses for adult, elderly people, pregnant, and lactating woman should not exceed 4000 IU/day.

Vastu Tips for Stress Free Home

Swati Jaggi

Home is said to be a place where you are most relaxed and calm as possible, especially in today's fast paced and hectic life, this is the place where you prefer going and spending quality time but sometimes our homes too are the source of stress and anxiety. Sometimes, I get clients saying they are not happy when they are at home or some say they get frustrated when they are alone, well in that case my explanation is, how we do yoga and meditation to keep ourselves healthy and positive, the same way our space also needs balancing with Vastu principles to create peace and happiness. As it is correctly said "Your space is a reflection of your Life, Body, and Mind", here are few simple tips to make your house stress-free:

- Mirrors should not be in bedroom and should never be in the position that will reflect the bed. If there are any then make sure to cover them in the night
- Most important point to remember is the time should never stop, i.e., the clock. If there are any watches which are broken or stopped, remove them from the house along with unwanted, broken or junk items, never keep unrepaired electronic items at home. Make sure your house should be clutter free
- Never put violent, dark, war or unhappy pictures in your house as it creates a negative environment
- We should avoid sharp edge furniture as they cut the energy flow and changes its direction to go in the wrong way, if you already have them then try to keep it covered nicely
- Do not block North-East corner and central area of your house. It is very important to have these areas clean and uncluttered
- Your sleeping position is also very important, i.e., your head should never be in north direction when you sleep, best is south, east is good, and west being average
- The kitchen should be in South-East direction and while cooking you should face East
- If you hang wind chimes or bells in North-West corner, it brings enjoyment and joy in relationships
- Though black color makes the bedroom look tasteful, but according to Vastu it should be avoided in bedrooms
- The most important point I would like to highlight here is, if you have a habit of complaining and grumbling all the time, it creates negativity in your space and should be stopped, you should feel blessed because there are so many people who cannot even dream about having their own house.

By following the principle of Vastu which is based on balancing the five elements, we can have peace and happiness in our house.

Tarot for August 2018

Aries: Good month, new opportunities coming your way, increase in finances, happy and satisfying month. Time to enjoy the fruits of your labor.

Taurus: If wanting a change in job this is the right time, change of country also possible. Love life will be good.

Gemini: Do not take bold decisions, try to take a conservative approach. Do not make major changes in life, if wanting change hold on for sometime. Health might not be very favorable.

Cancer: This month lady luck smiles on you, expect very positive changes in your life. If wanting to buy a new vehicle the time is favorable. Health wealth and happiness, so bask in the good time.

Leo: This month will be tough, lots of competition, things not working the right way. Unexpected events, you might just not feel bright this month, small health problems may also crop up.

Virgo: Celebrations, some auspicious ceremony to take place. You might get some unexpected gains. Favors from boss or family likely. If expecting a promotion you are likely to get it.

Libra: New contacts will prove very beneficial, lots of travel is indicated. You will enjoy work and will be appreciated. You might just feel under the weather, but generally a good month.

Scorpio: Have patience and be optimistic, things might not be working out the way you want, but things are not as bad as they look. Work related travel will keep you very busy this month.

Sagittarius: This month will be good for you, increase in income, promotion is likely. Health will be good, good month for marriage and romance.

Capricorn: Your boss might not be easy on you this month, lots of work with no appreciation, unexpected hindrances, and losses expected.

Aquarius: Good phase to continue, you will excel in your work but lots of unnecessary expenses on the cards. Be careful with money and try to avoid extra expenses.

Pisces: Lots of work but you will be getting very good results. your bosses will be very happy with you. Efforts will yield great results. You have the 'Midas' touch this month.

Manage and control your emotions, avoid unnecessary confrontations and flare ups.

Rest is in God's hands, have a blessed August.

—Deepa Kochhar (Noida)
kochhar.deepa@gmail.com

Caring for your breast - Breast Awareness

Dr Shubha Sinha

Breast awareness is being aware about symptoms of breast cancer, looking out for them regularly and reporting them on time to a doctor.

Breast cancer is the most commonly occurring female cancer in the world.

Breast cancer is commonest cancer of urban Indian women and second commonest in rural Indian women.

Breast cancer accounts for 27% of all newly occurring cancers worldwide and approximately 15% of all cancer deaths.

India is experiencing an unprecendented rise in the number of breast cancer cases across all sections of society. More than 1 lakh women are diagnosed with breast cancer every year (as per National Cancer Registry).

There is no way we can prevent breast cancer, but we can definitely detect it early and treat adequately.

Only and only with early detection, we can achieve longer survival.

To make people aware of early detection it is going to need lots of efforts since Indian society is so deep rooted in myths and alternative treatments and unusual illogical beliefs.

Presently, India already has one of the worst survivals from breast cancer in the world and India ranks number one in the numbers of healthy life years lost (DALY – Disability Adjusted Life Years) due to breast cancer.

Healthcare is low on priority and even in major cities "Screening" is an alien word.

Most people present only when symptomatic and on an average "symptomatic" cancers are stage 2B and beyond. So due to late presentation survival rate decreases.

In the West, majority of cancers (>75%) present in stage 1 and 2 resulting in good survival. There is an increase in number of patients presently with mammogram detected cancer with no symptoms. To reach this achievement India needs aggressive promotion of screening and awareness and proper treatment.

Screening for Breast cancer

Breast cancer screening is based on the concept that early detection of the disease often makes it possible to abort the natural progression to death, while a late diagnosis has a more ominous outcome. Thus goal of the breast screening is to gain lead time.

Disease presentable but not detectable ⟶ LEAD TIME ⟶ Disease clinically detectable

Asymptomatic **Symptomatic**

The breast screening tools involves Self breast examination (SBE), Clinical breast examination (CBE) and Screening Mammography. Breast ultrasonography and MR mammmography are optional studies done as and when indicated.

Recommendations for Breast MRI screening as an adjunct to Mammography:

Recommended Annual MRI screening (based on evidence)

- BRCA mutation
- First degree relative of BRCA carrier but untested

Screening guidelines				
Age group (yrs)	American cancer society (ACS) 2003-2007	American College of Radiology (ACR) 2004	National cancer Institute (NCI) 1997	US Preventive Service Task Force(USPSTF) 2002
20 - 39	BSE – monthly CBE – 3 yearly	No recommendation	No recommendation	No recommendation
40+	CBE – yearly Mammography - yearly	CBE – yearly Mammography - yearly	Mammography – 1-2yearly	Mammography – 1-2yearly with or without CBE
Age to stop	No upper age limit	No upper age limit	No upper age limit	Against screening after 70 yrs

BSE – Breast self examination ; CBE – Clinical breast examination

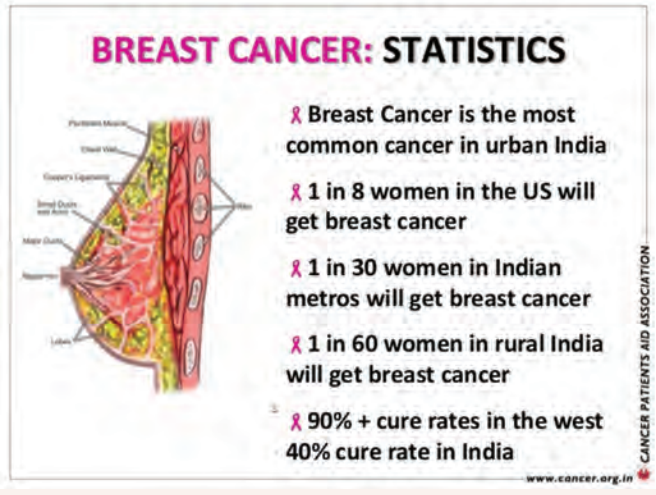
- Lifetime risk of 20% - 25% as defined by BRACAPRO or other models that are largely dependent on family history

Recommended Annual MRI screening (based on expert consensus opinion)

- Radiation to chest between ages 10 and 30
- Li Fraumeni syndrome and first degree relatives
- Cowden and Bannayan-Riley-Ruvalcaba syndromes and first degree relatives

Insufficient evidence to recommend For or Against MRI screening

- Lifetime risk of 15%-25% as defined by BRACAPRO or other models that are largely dependent on family history
- Lobular Carcinoma in situ (LCIS) or Atypical lobular hyperplasia
- Atypical Ductal hyperplasia
- Heterogenously or extremely dense breast on mammography
- Women with personal history of breast cancer including Ductal carcinoma in situ



Recommended against MRI screening(based on expert consensus opinion)

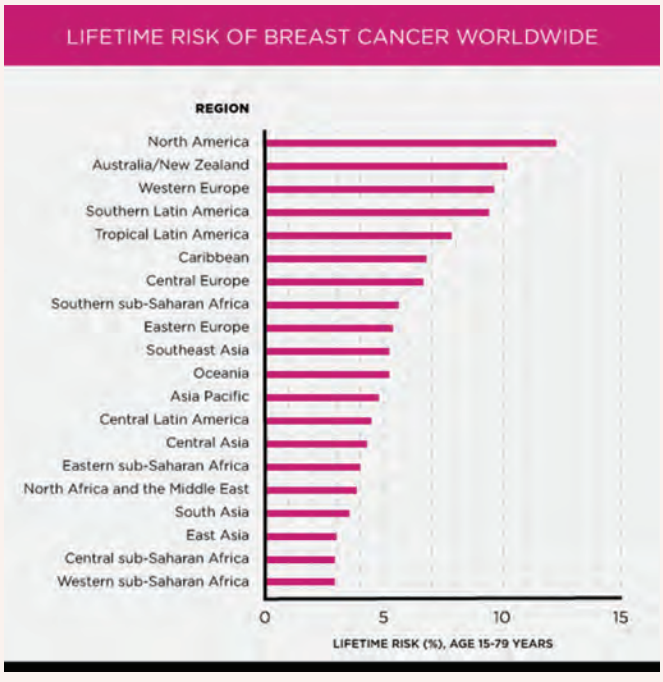
- Women at less than 15% lifetime risk

Ultrasound Screening

Ultrasonic Imaging has been used as an adjunct to mammography in women with a suspicous abnormality that is not easily or fully seen on mammogram or to image an area of the breast that has such dense fibroglandular tissue that the ability of mammography to provide a clear image is limited.

Conclusion

Screening enables us to detect a cancer much before it produces symptoms. As early detection of breast cancer is a key to survive breast cancer , we should promote screening.



Dear FOGSIans,

Greetings from the beautiful city of Taj (Agra).

Yes I am back from our second "Super Duper" Yuva FOGSI in Udaipur. Udaipur is a beautiful city and this Yuva was a combination of fun with academics.

So it's the month of sweet earthy smell, tiny droplets hanging on the leaves, thundering sound of rain, and wind in my hair. I just love rains and I hope all of you are taking small breaks to enjoy the monsoon with "Chai and Pakoras".

We are now off to Indore this week to our focused conference on "Breast".

Stay tuned.

Neharika

Dr Neharika Malhotra Bora
Joint Secretary
FOGSI

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FOGSI LONDON FOGSI INDIA MEET

Dr Kanthi Bansal

The memorable meet between Federation of Obstetricians and Gynecologists Society of India (FOGSI) London & FOGSI India was held on 5th July 2018 at the Great Hall, St Bartholomew Hospital, Church House, London. Around 70 members from London & India had attended the meet.

The program started with the welcome speech by Dr Dib Dutta. There was a formal introduction by the stalwarts of the London Chapter FOGSI with FOGSI Chapter India members. To name few members from London Chapter FOGSI. Dr Deb Dutta, Dr Gautam Mehra, Dr Jyotsana, Dr Sheela Swamy, Dr Neelanjana, Dr Reena Agarwal, Dr Manju, Dr Sameer Umerinkar, and Dr Anu Chawla were present. From FOGSI India, Dr C N Purandare, Dr Jaideep Malhotra, Dr Narendra Malhotra, Dr Rishma Pai, Dr Hrishikesh Pai, Dr Shyam Desai, Dr Kanthi Bansal, Dr Ameet Patki, Dr Krishnendu Gupta, Dr Mukesh Bansal, Dr Mriganka Saha, and Dr Monica were present.

Dr C N Purandare was invited to give his view on the meet. The speech by FIGO President was indeed very supportive and gave positive message for the future development of the London Chapter FOGSI.

The next speech was by none other than Dr Jaideep Malhotra, FOGSI President. She was extremely happy to see the Chapter grow so well within a short span of 1 year. She also expressed that this group meet has many purposes and she also felt that each one in the group wanted to do much more and so the outcomes were phenomenal. According to her she said plans are only good intentions unless they immediately degenerate to hard work.

Dr Rishma Pai who was instrumental in starting this chapter said that it's a truly special evening and appreciate the efforts made by UK and also all the other who have travelled from so far.

She expressed her feelings, that she felt like a mother-watching proudly as her child grows and blossom. She said that FOGSI London Chapter is growing and showing huge promises.

Dr Jaideep Malhotra had brought souvenir for the members of FOGSI London Chapter. She brought scarf for ladies and ties for gentlemen which were distributed by Dr Neelanjna and Dr Kanthi Bansal.

Dr Narendra and Jaideep Malhotra also brought famous sweets from Agra, India for the meet.

There were ten roundtable discussions, each with different topics. The topics includes:

1. Intrapartum Care basic and advanced; Maternal-fetal Medicine; Maternal Mental Health
2. Collaborative Research and Joint publications
3. Uro-gynaecology, Ambulatory Gynaecology, Scanning
4. Joint examination courses (MRCOG, DNB, and MICOG)
5. Reproductive Medicine
6. Conferences, Seminars, and Workshops
7. Medical Education and Training
8. Simulation training, MAS, Robotics
9. Contraception, Sexual health, Menopause, and Oncology
10. Joint working with NGO's and global bodies.

The round table discussions were very fruitful. At the end of the roundtable discussion, two or three members from each table gave a brief summary about the discussion. Dr Jyotsana had conducted the roundtables in an excellent manner. Summarized notes from each discussion were collected by Dr Jyotsana, so that it could be implemented. The ultimate outcome of these interactions was that they were new initiatives, with fruitful discussion and everyone looked forward to work in collaboration.

There was photo session and after the dinner, the meet completed with closing remarks and FOGSI anthem.

It was indeed a super evening with excellent arrangements and great food. Special thanks to the loving hosts from London Chapter FOGSI, Dr Neelanjana, Dr Sheela, Dr Jyoti, and others. Special thanks to Dr Dib Dutta for having left no stone unturned for making this meet highly successful. All the participants felt very proud to be a part of FOGSI & FOGSI London family.

Complied by Dr Kanthi Bansal





The Greener Doctrine

PAC—Menstrual Hygiene Awareness

May 1– May 28, 2018

Dr Archana Verma

It is a just around 28 days since the Green the Red campaign was launched to spread awareness about sustainable alternatives to disposable sanitary pads and tampons.

The campaign, has caught on in many different cities across India and has received extensive coverage in newspapers and local radio channels.

Taking into mind the international menstrual hygiene day in mind, "The Greener Doctrine" was launched on 28 April 2018, targeting 100 sessions for doctors by doctors in the 1 month as a run up to World Menstrual Hygiene Day – 28 May 2018.

Three gynecologists associated with green the red NGO contacted by the Public Awareness Committee of the Federation of Obstetricians and Gynecologists Society of India (FOGSI), and Dr Jaideep Malholtra, President FOGSI, and Dr Jayderp Tank welcomed the idea of a PAN-India campaign to promote newer modalities in menstrual hygiene management.

We find the most efficient way to get the message across was to request each of the 253 FOGSI affiliated societies across the country to conduct a session during their monthly society meetings.

The method proved to be efficient and effective. In just over 30 days, more than 100 sessions has been conducted in more than 80 cities covering more than 7,000 participants. The cities where sessions have happened are: Mandya, Ahmedabad, Agra, Akluj, Alwar, Aurangabad, Bengaluru, Bhopal, Bharuch, Bhilai, Chennai, Cochin, Dehradun, Delhi, Dhule, Ghaziabad, Gulbarga, Indore, Ichalkaranji (near Kolhapur), Jammu, Jabalpur, Jodhpur, Kolkata, Kukatpally(Hyd), Mathura, Meerut, Nasik, Nagpur, Noida, Nagercoil, Ooty, Patna, Ralegaon, Ratlam, Solapur, Shillong, Salem, Surat, Trichy, Ujjain, Udaipur, Varanasi, Vijayawada, Vizag, Vadodara, and Yavatmal. Apart from doctors, these sessions were attended by General Medical Fraternity viz Nurses, Hospital staff, Nursing students, and Medical students also.

There has been a wave of enthusiasm among the medical fraternity - doctors are spinning off whatsapp groups, reaching out to different communities, writing creative slogans in regional languages, making videos of their views, spreading the message through local radio channels, print media and social media and above all trying these options for themselves.

Some of them have decided to stock reusable menstrual hygiene products in their hospitals and clinics to make these products more accessible to women.

A group of doctors in Ratlam, Madhya Pradesh, celebrated the Menstrual Hygiene Day on 28th of May by conducting a menstrual hygiene camp in a distant adivasi village called Bhakat. Commendable indeed considering our doctors have to juggle these sessions with their professional work.

This year promises to be a year of menstrual hygiene, with celebrities talking about it, FM radio channels composing songs on it, several organisations running drives to donate menstrual hygiene products to the under-privileged.

While it is great that menstruation is finally being talked about openly, the importance of advocating reusable menstrual hygiene products cannot be stressed more.

Both from the perspectives of our health and the future of our environment, reusable menstrual hygiene products must come into the main stream narrative of managing menstrual hygiene. We are hopeful that the "The Greener Doctrine" has ensured just that!

Thankful to whole team including Dr Manisha Surat, Dr Sneha, Dr Varshar Shehla, and Dr Shraddha.


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BACTERIAL VAGINOSIS: A RISK FOR PELVIC INFLAMMATORY DISEASE

Dr.A.A.Faruqui, Clinical Pharmacologist,Mumbai-400050

INTRODUCTION

Reproductive tract morbidity is higher among the women of developing countries resulting in devastating consequences on health and social well-being. Majority of women in India continue to suffer from reproductive tract infections resulting into Pelvic inflammatory disease (PID).[1]

Pelvic inflammatory disease is often an infection of polymicrobial etiology, involving Neisseria gonorrhoeae (NG), Chlamydia trachomatis (CT), anaerobic organisms, and/or facultative organisms.[2,3] Pelvic inflammatory disease (PID) is a clinical syndrome that results from the ascension of microorganisms from the cervix and vagina to the upper genital tract. PID can lead to infertility and permanent damage of a woman's reproductive organs.[4]

CAUSES OF PID

A number of different microorganisms can cause or contribute to PID. The sexually transmitted pathogens Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) have been implicated in a third to half of PID cases.[4]

However, endogenous microorganisms, including gram positive and negative anaerobic organisms and aerobic/facultative gram positive and negative rods and cocci, found at high levels in women with bacterial vaginosis, also have been implicated in the pathogenesis of PID. Because of the polymicrobial nature of PID, broad-spectrum regimens that provide adequate coverage of likely pathogens are recommended.[4]

In healthy vagina, hydrogen peroxide producing lactobacilli inhibit other endogenous bacteria (such as the anaerobic gram-negative rods Bacteroides and Prevotella, genital mycoplasmas, and Gardnerella vaginalis) by producing bacteriocins, as well as hydrogen peroxide and lactic acid, all of which lower the vaginal pH to a level that is inhospitable to many other bacteria.[5]

Bacterial vaginosis is an imbalance in the vaginal microflora thought to increase susceptibility to sexually transmitted pathogens.[6] BV-associated organisms has been identified among women with cervicitis and PID.[7]

In women with bacterial vaginosis, the microbial load and the pathogenicity of the organisms are greater, which may overcome host defense mechanisms. Studies have suggested that, similar to acute PID, bacterial vaginosis is associated with subclinical upper genital tract inflammation.[8]

COMPLICATIONS OF PID

- Tubo-ovarian abscess (TOA)
- Tubal factor infertility
- Ectopic pregnancy
- Chronic pelvic pain[4]

Tubal factor infertility, ectopic pregnancy, and chronic pelvic pain are common sequelae of PID, yet most women with these conditions have no history of acute PID.[9] Subclinical PID is believed to cause similar long-term reproductive sequelae as acute PID.[8]

RISK FACTORS FOR PID

Some women are more likely than others to experience PID. They include women who:

- Have been ***infected with C. trachomatis or N. gonorrhoeae***, the bacteria that cause chlamydia and gonorrhoea.
- Have ***previously experienced PID***
- Have ***previously had bacterial vaginosis***
- Have experienced ***Mycoplasma genitalium infection*** in the past.
- ***Are young***: Adolescents are more likely to experience chlamydia or gonorrhoea infection than their older counterparts.
- Have ***recently had an intrauterine contraceptive device (IUD)*** inserted or removed.
- Have ***recently terminated a pregnancy or given birth***, which may similarly cause the spread of bacteria from the vagina to the uterus.
- Have ***recently had gynecological surgery***, which can also cause of the spread of bacteria from the vagina to the uterus, as it often involves inserting instruments into the vagina or uterus;
- Have ***a greater number of sexual partners***. The more sexual partners a woman has, the greater her risk of being exposed to infections which cause PID.
- ***Douche***: Douching increases the risk of PID because it disturbs the bacteria which normally inhabit the vagina and keep it healthy.
- Are of ***low socioeconomic status***;
- ***Smoke***, because smoking impairs the immune system and means that it cannot fight against an infection of the uterus as efficiently as it would otherwise do;
- Have ***genetic factors*** which may influence the risk of PID.[10]

Structural abnormalities of the genital tract, such as cervical stenosis, uterine anatomic abnormalities, and tubal disease, are also associated with an increased risk of developing PID.[11]

While gonorrhea and chlamydia have long been associated with acute PID, bacterial vaginosis has emerged as another risk factor for upper tract infection.[12, 13]

INCIDENCE OF CO-EXISTENCE OF BV WITH PID

BV is common among women with upper genital tract inflammation and pelvic inflammatory disease (PID).[8] When identified by microbial culture, a combination of BV-related microorganisms significantly elevated the risk of acquiring PID.[14]

The hypothesis that abnormal vaginal flora is a risk factor for ascending pelvic infection is supported by the findings of a Scandinavian study of over 1000 women undergoing first trimester surgical abortion, indicating that ***abnormal flora is associated with postabortal endometritis.***[15]

A cross-sectional study conducted by Khan et al. among 530 post-menopausal women in Uttar Pradesh (India) found that about 11.55% of the study subjects were diagnosed with PID (12.5% in rural areas and 10.6% in urban areas) in which bacterial vaginosis followed by Trichomonas vaginalis were most common.[11]

In a study conducted by Ness et al (2005) in 1140 females he found that, ***BV-associated microorganisms were associated with an increased risk of PID.***[14] Wiesenfeld et al. (2005) conducted study among 1293 females and found that ***BV was associated with subclinical endometritis.***[8]

In another study of 84 women presenting with clinically suspected PID, ***BV diagnosed by Gram stain was found to be a common concurrent condition in women with confirmed salpingitis, being diagnosed in 61.8% (34/55) of cases.***[12]

DISCUSSION

Vaginal environment with reduced lactobacilli may represent a potentially pathogenic condition, and not merely an intermediate step between normal flora and bacterial vaginosis.[8]

Bacterial vaginosis (BV) is a complex alteration of the vaginal flora that has been implicated in PID.[7] Bacterial vaginosis may mark women at high risk rather than itself being a cause of PID.[5] Carriage of non-BV-associated microorganisms does not increase PID risk. [14]

PID is a predominately reproductive age illness and its highest prevalence is in the second and third decades of life. [11]

CONCLUSION

There is a pressing need to create awareness among the women of the community regarding the identification and early reporting of symptoms of bacterial vaginosis. Findings suggest the possibility that a sexually transmitted cofactor may strengthen the relation between BV-associated microorganisms and the development of PID. There is a hidden burden of the disease (PID & BV) in the community and the associated risk factors, which can be prevented by life style and cultural changes if incorporated earlier in the lives.

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