

## Vaccination in Women

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*The Medical Disorders in Pregnancy Committee FOGSI would like to place on record its appreciation for the move to have a FOGSI consensus on vital issues. It is felt that the consensus will help promote the activities of FOGSI by stating clearly the stand of the Federation in issues which come up for discussion in many forums medical and non medical.*

It should be clearly understood that this consensus statement should not be misconstrued as mandatory rules to be followed by all gynecologists. Rather they should serve as a base upon which to build good practice with adequate leeway for specific situations, patients and providers.

The consensus is presented in the following format:

The statement is presented first and if required the context is placed after it. The section context was included as an explanation of the scientific logic behind the statement.

## **Background:**

Vaccination before during and after pregnancy helps protect women from serious infections . It can also help in improving the women's health in general .It is an important preventable measure which should be adopted rationally and the expert group has conceptualized this consensus for the Indian context. The guideline has been created for the age group of 11years onwards and taking into account the IAP recommendations of immunization for age group upto 12 years .FOGSI considers women's health in all the walks of life to be a responsibility and recommends vaccination in women in the appropriate context.

### **1. Acknowledgement of the Problem.**

**FOGSI acknowledges the magnitude of the problem of mortality and morbidity due to infectious diseases .FOGSI has a central role to play in recommending the vaccination strategies for women. Context:**

Vaccination is generally considered the purview of the pediatricians in the childhood and physicians in the adult context .There are many vaccinations such as the rubella which need to be extended to the adolescent age group and hepatitis and HPV need to be considered in this age group . In addition vaccinations during pregnancy such as the flu, tetanus,pertussis, chicken pox and diphtheria need to be considered .Vaccinations for pregnant women during pandemics need to be given special consideration.

### **2. Vaccination during the adolescent age group**

**MMR (2),Hep B ,Hep A ,HPV,tetanus,diphtheria , influenza and VAR(2) catch up vaccination is recommended<sup>1</sup> from 11 years onwards. Typhoid and cholera vaccination can be given seasonally.**

#### **Context**

BCG ,Oral Polio Vaccine and Triple (DPT) vaccine is usually given to all children.In addition vaccinations against Hepatitis B (Hep B),MMR (Mumps Measles Rubella ),Hib (Hemophilus influenza B),varicella(VAR),meningococcal infections are also given during childhood.In case the vaccine has not been taken at the recommended age of 4-6 years of age the catch up vaccination needs to be taken in the adolescent age group.

Catch up vaccinations for Hepatitis B, Tetanus, diphtheria acellular pertussis(Tdap),typhoid,Influenza, ?? rubella and HPV are recommended<sup>1</sup> in the adolescent age group. In addition, the medical history of prior affliction with these diseases should be elicited. Previous adverse effects of immunizations especially allergies should be noted.

## **2.1 Administration of Rubella Vaccine in adolescent age group .**

**FOGSI recommends administration of Rubella Vaccine to all adolescent girls as history of rubella infection is difficult to elicit.**

**2.1.1** This is to prevent the incidence of Congenital Rubella Syndrome (CRS) which occurs through vertical transmission if the woman is infected during the first 3 months of pregnancy.

**2.1.2** Antibody testing is not necessary before vaccination.

**2.1.3** Pregnancy should be avoided within three months of vaccination. However if pregnancy occurs within 4 weeks of vaccination there is a small chance of the fetus being born with CRS and usually follow and close monitoring with USG is advised instead of pregnancy termination .

## **2.2 .HPV vaccination in adolescent age group**

**FOGSI recommends HPV vaccination in all adolescents for protection against cancer cervix.**

**2.2.1** This is best given as early as the age of 9 years or before commencement of sexual activity .

**2.2.2** Catch up vaccination is recommended in case of incomplete vaccination.

## **3. Vaccination as a part of pregnancy planning**

**FOGSI recommends vaccination counseling as a part of pre-pregnancy counseling .(unvaccinated women)**

**History of occurrence of vaccine preventable diseases, previous vaccinations administered and allergic reactions to vaccinations must be recorded.**

**3.1** Rubella ,Hepatitis B and Varicella vaccination should be given preferably during postmenstrual period

**3.2** Pregnancy should be deferred for 3 months in case of Rubella vaccine.

### **Context:**

Immunization programs worldwide have made a major impact in the epidemiology of rubella both in the developed and several developing countries. In the US total cases decreased from 58 /100000 population in 1969 to 0.5 cases /100000 population in 1983 as a result of the effective MMR vaccination. In a study from Vellore it is reported that congenital rubella constituted about 9.8 % of all children born there with suspected congenital infections<sup>3</sup>.

**3.3** Hepatitis B vaccination with an ongoing pregnancy is safe and does not warrant a termination.

**3.4** HPV vaccination should be considered in this age group .In case the woman becomes pregnant after receiving the first dose of HPV vaccination, the next dose should be deferred; however there is no need to terminate the pregnancy. The rest of the dosages can be completed after delivery.

**3.5** Tetanus and diphtheria immunization can also be considered.

## 4. Vaccination during pregnancy

### FOGSI recommends immunization against tetanus, diphtheria, pertussis and influenza during pregnancy

**5.1** Two doses of tetanus toxoid injection at least 28 days apart are to be given to all pregnant mothers commencing from second trimester. If the subsequent pregnancy occurs within 5 years only one booster is given.

#### Context

In contrast to developed nations where tetanus is rare, it remains endemic in the developing world. The incidence often increases following natural disasters such as earthquakes and tsunamis. In 2012 there were 2404 cases of tetanus reported to the WHO from India<sup>4</sup>.

**4.2** Tetanus diphtheria acellular pertussis (Tdap) vaccination can be considered instead of the second dose of tetanus toxoid to offer protection against diphtheria and pertussis in addition to tetanus.

**4.2.1** The regular pertussis vaccine is contraindicated in pregnancy.

**4.2.2** (Tdap) tetanus and diphtheria vaccination can be an alternative if Tdap is not available.

#### Context :

In the year 1997 and 1998 the number of diphtheria cases reported to the WHO from India were 1326 and 1378 respectively. Since then there has been a steady rise in the incidence of the disease. This has now plateaued over the last 5 years. In 2012 a total of 2525 new cases of respiratory diphtheria were reported from India. For reasons that are not well understood pockets of diphtheria are reappearing primarily in developing countries<sup>4</sup>. IAP suggests immunization of pregnant women with single dose of Tdap during the third trimester (preferred 27 - 36 weeks gestation) regardless of the interval between previous Td or Tdap vaccination. Tdap has to be repeated in every pregnancy irrespective of the status of previous immunization (with Tdap)<sup>1</sup>

**4.3** Influenza vaccination is recommended for mothers from 26 weeks onwards

**4.3.1** In case of a pandemic the influenza vaccine can be given earlier to protect the mother

#### Context

Both influenza A and B viruses are important as respiratory pathogens. Influenza occurs all over the world with the annual global attack rate estimated at 5-10% in adults and 20-30% in children. Most of the infections globally are caused by influenza A(H1N1), Influenza A(H3N2) and Influenza B viruses. 'Antigenic drift' results in seasonal epidemics and is due to point mutations that occur during viral replication. The inactivated influenza vaccine (as opposed to live attenuated vaccine) is recommended in pregnancy. This offers protection to the mother (pregnant women are at a higher risk of ARDS) and to the newborn who cannot be vaccinated for the first 6 months of life.

Higher rates of influenza associated complications recorded among pregnant women during the 2009 H1N1 pandemic resulted in recognizing pregnancy as a high risk group and therefore vaccination is recommended in this group.. Studies have demonstrated a 63% reduction in influenza illness among infants up to 6 months whose mothers received influenza vaccination during pregnancy<sup>5,7</sup>.

## **5. Postnatal vaccination**

**FOGSI recommends postnatal rubella ,hepatitis B, varicella,Influenza, tetanus and HPV vaccinations to all non immunized postnatal mothers .**

### **Context :**

Postnatal period is a good window of opportunity which should not be missed to protect the mother and her future progeny.Influenza vaccination of the pregnant and parturient woman reduces the risk of respiratory illness including laboratory-confirmed influenza in their infants up to 6 months of age as a result of both transplacental maternal antibodies, and increased anti-influenza antibodies in breast milk <sup>6</sup>.Vaccines such as rubella can be safely administered in concurrence with postnatal contraception.

Cocooning: Adolescents and adults (parents, siblings, grandparents, child-care providers, and health-care personnel) who have or anticipate having close contact with an infant aged <12 months should receive a single dose of Tdap to protect against pertussis if they have not previously received Tdap

## **6. Vaccination in adult and elderly women**

**FOGSI recommends vaccination against HPV , tetanus ,diphtheria and influenza for women of all ages**

**6.1** Tetanus booster dose to be given once every 10 years throughout the life.No booster dose is necessary in case of an injury or a surgery within 5 years of vaccination. Td can also be given throughout life in place of tetanus toxoid**6.2** Influenza vaccination annually can be offered to all women. The live attenuated vaccine is recommended up to 49 years of age and after that .

**6.3**HPV vaccine is licensed to be used up to 45 years of age

**6.4**Unvaccinated adults of age 65 years and older be vaccinated by Tdap instead of Tetanus toxoid if in close contact with an infant .

**Context :** Since protection against tetanus and diphtheria is inadequate when given together,Td is recommended instead of tetanus toxoid alone. Influenza vaccination prevents influenza illness amongst approximately 70-90% of healthy adults aged under 65years <sup>8,9</sup>.

**Important points to note :** The clinician should be well informed about the correct dosages, storage recommendations,contraindications and adverse reactions of all vaccines. Whenever these infections are identified the appropriate authority in your locality should be informed. .

### **Summary:**

Vaccination should be offered to all women throughout their life time and should be an important intervention to be considered in the practice of obstetrics and gynecology. The clinician should be well versed with the schedules of immunization for women...

## References

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Recommended reading : Indian Association of Physicians of India 2014 guidelines .

Good Clinical Practice Recommendations are based on the clinical experience of the guideline development group.