

Pregnancy with Zika Virus – Psychosocial Impacts and High Risk for Post-Traumatic Stress Disorder (PTSD)

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Editorial

Structural and functional anomalies that develop during pregnancy are known as birth defects or congenital diseases. Approximately 303 000 affected newborns fail to survive and the rest suffer lifetime disabilities every year [1]. Most prevalent anomalies are congenital heart diseases followed by neural tube defects. Neural tube defects (NTDs) range from anencephaly, microcephaly and spina bifida. Multiple factors have been evidenced to have causal relationship with NTDs including nutritional and infections.

The Zika Virus (ZV) infection has recently been related to microcephaly between 2014 and 2016 in Brazil and French Polynesia [1]. ZV crosses the placenta and affects developing fetus, therefore, has been identified as a teratogenic virus [2]. Congenital Zika Virus syndrome (CZS) consists of microcephaly, decreased brain tissue, damage to the back of the eye, joints with limited movement and increased muscle tone defined by the US centre for disease control and prevention (CDC) [3,4]. Considering the anomalies resulting in ZV infected pregnancies, the mental health condition of the pregnant women, stress of the families and economic burden on the governments is unimaginable. Study of Psychosocial impacts of pregnancy with ZV till today is just the tip of the iceberg. Pregnant women diagnosed with Zika virus infection, irrespective of the stage of the pregnancy, experience mood changes, anxiety, and depression. The agitation of complications to be, due to Zika infection in pregnancy, irrespective of the fact whether they happen or not, result in adverse functional and temperamental consequences on mental health.

Evidence suggests increased psychological stress in Brazilian women with ZV complicated pregnancies [5]. The different stages from the start of pregnancy till postpartum followed by a microcephalic baby to be taken care of for the lifetime precipitates a wide array of mental health conditions. Anxiety and depression in mothers of microcephalic newborns are much higher than those of normal babies [5]. Other than mood disturbances ZV infection in pregnancy is causing Post-Traumatic Stress Disorder (PTSD) as well. Here it is proposed to consider the pregnancy, complicated with ZV infection, as a prospective condition leading to PTSD.

In general, PTSD is defined as the mental state of a person as an outcome of personal experience to a stressful condition. According to The Diagnostic and Statistical Manual of Mental Disorders (DSM-5), Post-Traumatic Stress Disorder (PTSD) is acute stress disorder that occurs in response to exposure to a stressful event and is diagnosed by certain criteria [6]. Every single woman of reproductive age living in ZV endemic area is part of an environment and society where the issue of microcephalic babies is a collective concern. The first-hand experience of such a pregnancy leads to negative thoughts and sense of blame for one's self in spite of without any fault of the pregnant women herself. This aligns with DSM-5 Criterion C – Avoidant symptoms – avoiding people or situations connected to the traumatic event. Pregnant women not only avoid friends, family, and relationships but may neglect herself followed by missed antenatal visits. Such situations end up in obstetric complications that could otherwise be avoided. Criteria B - intrusion or re-experiencing - involves the repeated exposures of an affected woman to counseling, diagnostic tests, reminders of precautions, preparing for complications and carrying a microcephalic baby during antenatal visits. The pregnancy complicated with ZV and a microcephalic baby does not end at birth as the baby has to live the life with this anomaly and be taken care by the mother. Therefore, every single pregnancy in ZV endemic area becomes a social, occupational and public health issue as well. This ripples the whole society. The social and individual mental health issues, as a consequence of pregnancy with ZV, must be taken care of as an issue that may progress as PTSD. The solution lies in the timely diagnosis of mood disorders and considering these pregnant women high risk for developing PTSD. Social support networks and counseling of the mothers to be, must be strong enough, especially by the obstetricians and healthcare providers. There must be counseling of family and friends at the same time and build up a team effort to raise a microcephalic baby. Currently, there is no such awareness about PTSD in this context, therefore, it is not only under-diagnosed but also under-managed. Thus, the PTSD becomes a continuous phenomenon and a giant mental health problem.

The mainstay for the prevention of ZV spread are the ZV vaccines. The vaccines being developed include DNA, mRNA and live-attenuated vaccines, tested in animal models and non-human primates and are in early phase clinical trials [7]. The

truly effective vaccine must be safe enough, economical and be able to be used during pregnancy without its own side effects. The ground-breaking research of the ways the ZV gets away with the immune response of the human body crosses the placenta and infects the developing fetus is fundamental to develop effective therapeutics. The ZV and its teratogenicity is a complicated issue that needs to be dealt at individual, community and world level for healthy future generations.

By relating this issue with the society in general and pregnant women, parents of microcephalic babies, healthcare providers and policy makers, in particular, with PTSD criteria, it is proposed to consider PTSD as a prospective complication. This will positively affect the current management of pregnant women with ZV infection. To recognize the pregnant women having ZV infection and diagnosed with mood disorders as high-risk candidates to develop PTSD can be a guideline for managing such cases. Re-defining the healthcare strategies may improve the strategies for better psychosocial care all over the globe.

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