Editorial

Immunization Stress Related Response

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Immunization Stress Related Response (ISRR) is one of the five subcategories of cause specific definitions of the adverse events following immunization (AEFI).[1] The Council for International Organizations of Medical Science (CIOMS) and World Health Organization (WHO) working group on pharmacovigilance has defined ISRR to replace the former terminology of "reaction related to anxiety" because it does not cover all the elements that can occur and anxiety may not manifest during such events. Therefore, ISRR is better to describe a combination of signs and symptoms that cause-specific AEFI, which includes acute stress response, vasovagal reaction, and dissociative neurological symptom reactions (DNSRs) with or without non-epileptic seizures.[2] The process of immunization is recognized as an event which induce the stress response. ISRR is different from other AEFI, the symptom may occur not only during or after immunization but also before immunization. ISRR may be present individually or in cluster and tends to be acute and transient but can also be chronic.

An acute stress response occurs when symptoms develop due to a stressful event. Symptoms usually develop before, during or immediate after vaccination, usually within 5 minutes and vary in severity of symptoms. A range of symptoms include mild abdominal discomfort to more severe responses such as headache, nausea, palpitation, difficulty breathing and hyperventilation with paraesthesia in the fingers and toes.[2, 3] Vasovagal reaction such as dizziness or brief loss of consciousness (syncope) that results in bradycardia and/or peripheral vasodilation with hypotension may occur after acute stress responses.[4]

ISRR may manifest as DNSRs often present acutely and commonly trigger by a reaction to stress. These reactions previously were classified as a conversion reaction. Symptoms are involuntary and can include blindness, partial or total paralysis, difficulty speech, numbness, abnormal movements, gait irregularities, and non-epileptic seizures.[2] There are reports of clusters of these reactions following immunization.[5] The symptoms and sign may take hours to days to develop after immunization. History with careful observation and examination is critical to diagnosis.

Individual response to a stressful situation is complex and involves a combination of biological, psychological, and social factors. ISRR is explained as a conceptual biopsychosocial model. The biological factors such as adolescent, female gender, low body mass index, an individual's pain experience and prolonged standing may influence acute stress response including a vasovagal reaction following immunization. Psychological factors include underlying anxiety, previous negative needle experiences, history of acute stress response, personal expectations and an individual's temperament may affect the perception of pain. Social factors include false or misleading news reports and social media messages about immunization, experience of peer, community and family support for immunization, community trust in health care, community perceptions, norms, and values about immunization.[2] Understanding these different factors (biological, psychological, and social) and recognizing ISRR is a key to develop a framework. The appropriate management and prevention either in an individual or in a cluster is an important strategy of a successful framework.

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Individuals or clusters of ISRR following immunization have been observed in several countries and can be disruptive to immunization programs and decreased in vaccination coverage.[5] All health care professionals involved in immunization or front-line vaccinator should be informed about and trained in the characteristics of ISRR, including measures to prevent or minimize their occurrence and recognition of the signs and symptoms when they occur following immunization. General preventive measures should be in place to reduce anxiety and fear before, during and after immunization which are appropriate for age and developmental stages. Measures should target factors such as the environmental in which vaccines are given, the attitudes of health care providers, communication, and evidence-base measures to reduce pain. Effective measures can be taken to avoid ISRRs and the resulting immunization avoidance.[2]

Prior to initiating a large vaccination campaign, public health authorities should have plans to prevent and effectively manage ISRR in clusters. Strong communication plans must be in place to reduce fear and uncertainty by providing information on the real cause of an ISRR.[2] Especially in an era of increasing social media, immunization programs should develop a close collaboration with the media. Appropriate communication messages can help to mitigate the impact of ISRR.

In conclusion, ISRR describes AEFI well due to a stress response rather than the anxiety reaction. ISRR does not have a causal relationship with the vaccine product or immunization error-related reactions. A stress response can occur before, during or after immunization. Understanding the pathogenesis and clinical spectrums of ISRR can provide an effective prevention measures and appropriate management. This is a key part of a successful immunization program and maintaining public confidence in vaccines.

References

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