

Autoimmune syndrome induced by adjuvants

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Adjuvant-induced autoimmune/inflammatory syndrome (ASIA) is a syndrome involving pathological and unintended consequences of adjuvant administration.

Chronic stimulation of the immune system by substances used as adjuvants can lead to the development of numerous symptoms, such as chronic fatigue, joint pain and inflammation, myalgia, cognitive impairment, and neurological symptoms. Immune stimulation can also induce nonspecific and specific autoantibody production. Over time, such stimulation can be a triggering factor of development of a specific immunological disease. The first description of potential complications of treatment with silicone and paraffin fillers, named as human adjuvant disease (HAD) was Miyoshi et al. [1] in 1964. Next in the first part of 21. Century Alijotas-Reig et al. [2] identified manifestations triggered by synthetic bio-implants other than silicone and paraffin termed “human adjuvant-like disease.” Finally, in 2011, Shoenfeld and Agmon-Levin [3] proposed the term adjuvant-induced autoimmune/autoinflammatory syndrome (ASIA) to describe specific clinical manifestations resulting from an immune response to adjuvants and presented classification criteria of ASIA syndrome. Most common symptoms associated with ASIA are as follows: myalgia, myositis or muscle weakness, arthralgia and/or arthritis, chronic fatigue, unrefreshing sleep or sleep disturbances, neurological manifestations (especially

associated with demyelination), cognitive impairment, memory loss, pyrexia, mouth dryness.

Currently concept of the exposome (external such e.g. as air, diet, and social factors) and internal (biological) considered as associate with ASIA. Also, due to the problem of developing autoimmune phenomena after adjuvants, the search for newer solutions continued, especially in vaccines, and so the era of nanoadjuvants arrived.

In conclusion, evidence supporting a relationship between exposure to adjuvants and symptoms related to autoimmunity/autoinflammation, as demonstrated by experimental, descriptive and observational convinced to ASIA syndrome. However, further observations and studies with appropriate design and long-term follow-up are need to fully support this association.

References

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2. Alijotas-Reig J, Garcia-Gimenez V, Llubra E, Vilardell-Tarrés M. Autoimmune/inflammatory syndrome (ASIA) induced by biomaterials injection other than silicone medical grade. *Lupus*. 2012; 21: 1326–1334, DOI: 10.1177/0961203312458838.
3. Shoenfeld Y, Agmon-Levin N. “ASIA” – autoimmune/inflammatory syndrome induced by adjuvants. *J Autoimmun* 2011; 36: 4–8, DOI: 10.1016/j.jaut.2010.07.003.

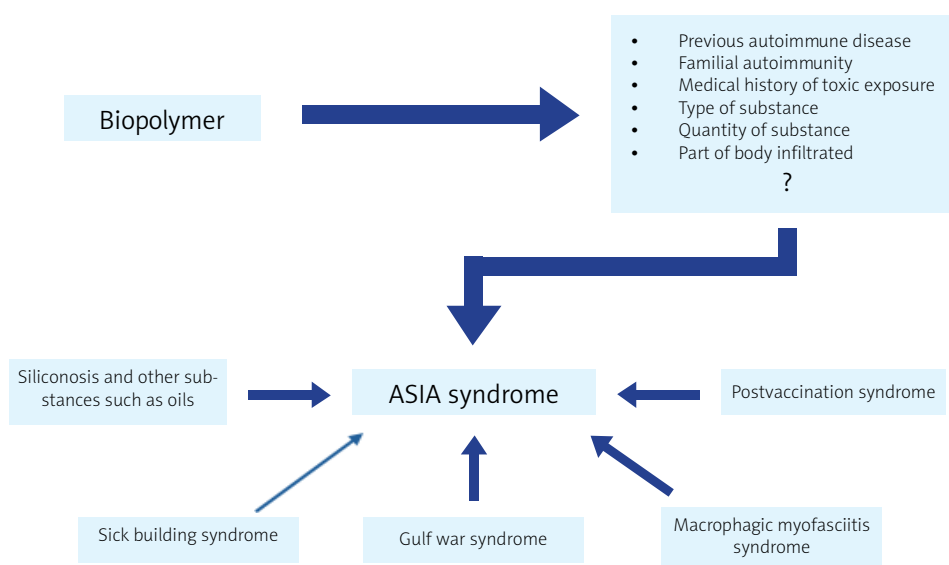


Fig. 1. ASIA syndrome.