

## HYPERSENSITIVITY TO VACCINATION

The purpose of a vaccine is to induce immunity by means of the reaction of the immune system and for that reason its administration can give rise to certain undesired effects.

It should be remembered that all drugs, including vaccines, are not exempt to cause mild, moderate or serious adverse reactions during their administration. There are certain factors intrinsic to the product, genetic, immune and environmental factors that can interact with each other and, therefore, interfere in the individual response of each person with its administration.

Vaccines, unlike other medicines, are administered to healthy people with a preventive purpose and therefore it is necessary an optimum safety profile of the drug. In addition, it is important to know the precautions and contraindications of each vaccine in order to avoid risks in the vaccinated population.

Most of the adverse effects produced by vaccination are mild and transient, linked to local reactions that are limited to transient pain, swelling and/or redness in the area of administration.

The adverse reactions that can appear after the vaccination, are classified according to the WHO, in the following groups.

-Reactions induced by vaccination:

Local and systemic (fever, irritability, malaise, systemic symptoms, headache, arthralgia). These adverse reactions can be subdivided into common reactions that are usually mild, and rare that can be more serious (seizures, type I hypersensitivity reactions and II, neurological reactions, thrombocytopenia).

-Reactions due to defects in the quality of the vaccine:

Due to the intrinsic characteristics of the vaccine, the maintenance in optimal conditions of the preservatives, antibiotics and other substances that allow its stabilization.

-Reactions due to program errors (storage, transport, handling or administration)

-Reactions due to anxiety for the same act of vaccination:

Vasovagal syncope is described as a secondary reaction at the time or after the application, due to a feeling of fear to the application of an injectable.

In order to cope with this situation, there is an important educational, preventive and surveillance function. In addition, the knowledge of the intrinsic characteristics of the person, together with the genetic susceptibility of the same, can help in the resolution of these reactions, with their identification and anticipation, contributing the opportune measures in each moment.

Identifying the genetic factors associated with the adverse effects, would allow a screening and knowledge prior to the administration of vaccines, which could stratify and foresee the individual susceptible effects in order to optimize and resolve them.

### GENE OR REGION STUDIED

- MTHFR
- IL1A
- IL1R1