



Anaphylactic Shock*

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NURSES may come across a condition which may be shocking and very difficult to meet as it may catch a nurse on the wrong side. One of my seniors narrated the following incident. Once she helped a house surgeon to give a liver extract injection. Patient was alright, but as the Doctor and herself turned their backs the patient was nearly dead (as she put it). He started having muscular twitchings and showed signs of shock and a little froth was noticed from the mouth. But for the Doctor's presence on the spot and giving adrenalin immediately the patient would have lost his life. She said and added "what do you think about this condition?"

Although I was a junior student I happened to know the cause of such a condition and happily blurted out "ANAPHYLACTIC SHOCK". Subsequently I learnt all about it and would like to share my knowledge with the readers of SNA page.

In Greek "Ana" means backward "phylaxis" means protection. Therefore, anaphylaxis means opposite of protection. We are all familiar with the word prophylaxis, meaning protection in its broader sense.

Anaphylaxis can be induced in experimental animals like Guinea Pig by injecting histamine. The reaction is rapid as the animal passes into acute shock and a severe respiratory embarrassment, terminating in death. In man, fortunately,

fatal anaphylactic shock is rare, but may occur in an intravenous injection of therapeutic serum especially diphtheric serum.

One of the first persons to have suffered anaphylactic shock was a young son of professor Langerhans (who described Islets of Langerhans in pancreas). It was reported that the boy was alright for few minutes after the injection. But ten minutes later he was found dead. This reminds me of a story, which appeared in a newspaper. The newspaper had reported the death of an M.P. after an injection (now I know it was due to ATS).

Generally, anaphylactic shock occurs as the reaction of a serum administration. We know that most therapeutic sera have horse serum as the base. For this reason unless it is known that the patient has had an injection of serum it is wise to give a test dose for hyper-sensitivity by giving subcutaneous inoculation of a small amount of serum.

The mechanism responsible for this reaction appears to be a combination of injected antigen with already circulating antibodies forming an antigen-antibody complex which then acts on sensitised cells with the release of histamine. The histamine released causes spasmodic contraction of muscles.

In rare cases fatal anaphylactic shock may be produced by stings of bees or wasps. Most bee keepers become immune to the poison as they are subjected to frequent stings.

But occasionally hyper-sensitivity rather than immunity causes fatal results after a single sting.

Prevention

When injections are given adrenaline and atropine should be kept ready. Of late cortisone is also used for treating anaphylaxis. Other precautions are same as any other shock. The key to success is immediate action. A minute's delay may cause death. Vigilance and spontaneous action is absolutely necessary.

Asthmatic patients are prone to this reaction. Rarely injections of penicillin or liver extract may cause this condition.

Difference between anaphylactic shock, serum sickness and allergy.

Serum sickness is milder and a different reaction of serum marked by urticarial rash, fever, pains in the joints and swelling of the lymph nodes.

Allergy on the other hand means individual's reaction to various drugs, food or climatic changes. There is difficulty in deciding on a suitable nomenclature for hyper-sensitivity and allergy which in fact means the same thing and are very often described by many writers as interchangeable. However, public for whom allergy has become a household word use the term to indicate an individual's hypersensitivity or idiosyncrasy to pollen, food, and animals waste etc.

*Based on a role play presented at the SNA Biennial Conference held at Vellore.