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The Short-Term Effect of Mustard Gas on the Serum Immunoglobulin Levels

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Abstract:

Mustard gas (MG), as a chemical warfare agent was used by the Iraqi army in Iran-Iraq conflict against military men in the battlefield in 1985.

The serum levels of IgG, IgA and IgM of patients exposed to MG in the battlefield were measured by single radial immunodiffusion from day 3 up to one month after exposure to MG.

The serum levels of IgG in patients showed significant decrease on day 3 after exposure to MG. However, the levels of IgG in the serum samples collected from the patients during 4-18 days after exposure to MG were found to increase. The increase in serum IgG levels in the sera of patients which were collected during 19-31 days after exposure to MG was found to be highly significant, surpassing those from the controls. The levels of serum IgA in patients during one month after exposure to MG showed alterations similar to those of serum IgG, however the serum alterations of the patients IgA, comparing to those of the normal controls were not significant. The serum levels of IgM in patients did not show marked alterations during one month after exposure to MG comparing to those of the normal controls.

The initial decrease in serum levels of IgG in patients is discussed in terms of a possible leakage of IgG into the skin blisters and into other severely affected parts of the body such as respiratory system, whereas the subsequent increase in serum IgG is interpreted as due to (auto) antigenic stimulation of the patients' immune systems.

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