Diphtheria is a highly contagious life-threatening disease caused by the toxigenic strains of *Corynebacterium diphtheriae*, which are transformed by a bacteriophage carrying the toxin gene. Diphtheria causative agent and its major virulence factor diphtheria toxin are well studied, but outbreaks of disease still occur worldwide. Rapid development of new methods in immunology and molecular biology is currently leading to improvement of prophylaxis, diagnosis and treatment of diphtheria. This review highlights the microbiological, epidemiological and immunological aspects of diphtheria infection, role of diphtheria toxin and others virulence factors in diphtheria pathogenesis and role of humoral anti-toxic immunity in the protection against disease. Perspectives in development of new diagnostic tests, anti-diphtheria vaccines, immunobiological preparations and antidotes for prevention of diphtheria infection, and other anti-diphteria means was also discussed.

**Key words:** diphtheria, diphtheria toxin, immunity, diagnostic tests, vaccines, antidotes, recombinant proteins.

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