Al-Anbar Medical College
Family and Community Medicine Department
Epidemiology of Communicable Diseases
Dr. Ahmed Al-Delaimy MBChB, MSc, PhD

Diphtheria

Acute bacterial caused by Corynebacterium diphtheria (Klebs-Loeffler bacillus); which is G+ve rod, non-sporing bacilli disease that involves the mucous membranes of the tonsils, pharynx, larynx or nose.

Classification: gravis, intermedius, mitis,

Types:

Pharyngeal, nasal, Laryngeal, Cutaneous).

Incubation period 2-5 days.

Clinical Picture: begins sore throat, fever, marked tachycardia, membrane may be not present, bull neck may be present, lymph node enlargement, complication: myocarditis, laryngeal obstruction, peripheral neuropathy.

Diagnosis*:* Clinical grounds, Culture & sensitivity (loeffler`s medium), Direct smear swab for microbiological diagnosis (KLB), Fluorescent test.

Epidemiology:

It's now well controlled in most developed countries by routine immunization of infants, also the acceptance of the (EPI) Expanded Program of Immunization by most of the developing countries, the incidence of diphtheria has dropped dramatically.

Mode of transmission: Air-born infection, diirect and indirect contact; raw milk.

Susceptibility:

- Infant born of immunized mother and usually lost before the sixth month.

- Life long immunity is usually acquired after disease.
- Immunization with toxoid produces prolonged but not life long immunity.

Susceptibility to infection may be tested by means of the Schick test: dose of 0.2 ml of diluted toxin is injected intradermally at the forearm, a positive test consist of an area of redness 1-2cm diameter at site of test.

Prevention:

1- Educational measures are important; inform public and particularly the parents of young children of the hazards of diphtheria and the necessity for active immunization.

2- The only effective control is widespread active immunization with diphtheria toxoid

D.P.T vaccine 0.1 IU/ml for less than 7 years age (5 doses): 2m, 4m, 6m, booster dose: *18m, preschool age(4-6 yr.)*

At school entry can give (Td) with reduced concentration of diphtheria toxoid as booster doses and can be given with typhoid vaccine.

Control:

1- Report

2- Isolation: strict isolation for pharyngeal diphtheria, contact isolation for cutaneous diphtheria until 2 successful cultures 24hr. a part are –ve

3- Concurrent disinfection: of all articles in contact with patient and all articles soiled by discharges of patient.

4- Quarantine: adult contacts whose occupations involve handling food(especially milk) or close association with non immunized children should be excluded from work until prove not to be carriers.

5- For contacts: all close contacts should have cultures swab taken from the nose and throat and should be kept in surveillance for 7 days if +ve culture than admit to hospital, 7-10 days course of erythromycin and toxoid vaccine.

Specific treatment:

Diphtheria Antitoxin (DAT) 20,000-100,000 units, if diphtheria suspected on the basis of clinical findings given immediately without waiting for the result of bacteriological findings.

Penicillin 4 times daily for 2 weeks.