Communicable diseases

Definition

A communicable disease is defined as an illness caused by an infectious agent or its toxins which can be transmitted directly or indirectly to a well person.

Sources of infection:

Consist of man, animals, insects or environmental conditions such as dust or dirt and contamination of food and water.

Incubation period:

Is the period between exposure to the disease and the appearance of the initial signs and symptoms of the disease.

Communicability period:

Is the time during which an infected person can transmit the disease directly or indirectly to another person .

Mode of transmission:

Method of spread the disease to man.

A carrier ;

Is a person or animal having an infectious agent without manifesting symptoms.

Immunity :-

Is the ability of the body to resist the infecting agent.

Common communicable disease among children

I- Communicable diseases caused by bacteria are:

Diphteria , Pertussis [whooping cough] , Tetanus , Scarlet fever

II. Communicable diseases caused by virus are:

- Chicken pox [varicella], Small pox, Measles, German measles, Mumps Poliomyelitis [Infantile paralysis] ,Meningitis.

I- Communicable diseases caused by bacterial infection

1- Diphteria

- **Etiology :-** Diphteria bacillus :
- **Incubation period**: from 2-6 days
- **Communicability period:** several hours before onset of the disease until organisms disappear from the respiratory tract
- **Mode of transmission:** droplets from the respiratory tract of the infected person

Clinical manifestation :

A child with diphtheria seeks medical help for one of the following:

1- Sore throat:

Fever, Difficulty to swallow, swelling of the neck, exudates or a yellow gray membrane on tonsils and may be pharynx.

2- Croup :

Hoarse or croupy and stridor, noisy respiration. Child may have severe respiratory distress. The membrane may cover the vocal cord

when examined with laryngoscope

3- **Nasal discharge:**

Pussy, bloody nasal discharge, the membrane can be seen on the nasal septum.

4- **Infected skin ulcer**

This skin ulcer can be confused with impetigo. Other signs and symptoms could present in severe cases or can also be present for other cases are :-

1- purulent conjunctivitis

2- Otitis media

3- Fever and malaise

Treatment:

1 - Antibiotics 2- Antitoxins

Nursing care

1- Isolation

2- Bed rest

3- Suction for respiratory distress

4- Vital signs every 2-3 hours

5- Oral hygiene for the membrane, never use tooth brushes and swabs because of the danger of disturbing the membrane and cause bleeding

6- Soft diet

7-Gavage feeding or I.V. fluid administration

8- Oxygen therapy

Complications

I - Bronchopneumonia

1-Cardiac failure, myocarditis, kidney dysfunction

Prevention

By immunization D.P.T vaccine (Active injection with antitoxins-passive

immunization)

2- Pertussis (whooping cough)

•**Incubation period**: from 5-21 days

•**Communicability period**: from 4-6 weeks from onset of the disease

•C**ausative agent**: Gram - negative bacilly

•**Mode of transmission** by droplet

•**Clinical manifestation**:-

1- Catarrhal stage :- - Mild fever, sneezing and persistent cough with tearing

2- Paroxysmal stage: - Several sharp coughs in one expiration, then a rapid one inspiration followed by a whoop. Red face, cyanosis and dyspnea may occur. anorexia

3- Convalescent stage: Cough and vomiting become less.

Treatment

l- Symptomatic treatment 2 - Antibiotic therapy

3- Sedatives may be given

Nursing care :-

1- Protect child from any stimuli, place him in dark quiet room and minimal handling

2- O_2 therapy if dyspnea and cyanosis present.

3- Tracheostomy is required.

4- Suction should be done frequently.

5-Check vital signs carefully

6- For constipation use enema

7- I.V. therapy or Gavage feeding should be required,

Complications

1-Anoxia 2-pneumonia's

Prevention

1- Active immunization D.P.T vaccine

3-Scarlet fever

- **Incubation period**: from 2-5days

- **Causative agent**: Beta hemolytic streptococcus group A .

- **Mode of transmission** by droplets .

- Clinical manifestation:

- Vomiting - high fever then drops *when* rash appears.

- Headache - sore throat - strawberry tong

- Red and swollen tonsils .

-Rash appears –within the first 5 days of disease .'It well be over the body but not

the face.

- Pulse rate is rapid - Desquamation may occur early 5 to 6 days or later in the 4thweak of the disease it start at the top of the body and proceeds downward .

Treatment

1- Penicillin 2- Sedatives 3- Diet

Nursing care:-

1- Bed rest for 12 days and keep patient warm.

2- Daily bath and change Lenin frequently.

3- Lubricate skin well with oil daily as doctor order.

4- Nasal aspiration by gently suction.

5- Accurate intake and output.

6- Diet as required

7- Observe for complications.

Complications

1- Rheumatic fever.

2- Glomerulonephr

itis 3- Pneumonia.

Prevention: - None

II. Communicable diseases caused by virus infection

l-Chicken pox (varicella) .

•**Incubation period**: from 10-21 days

•**Communicability period**: one day before and six days after the appearance of

the first vesicles

•**Causative agent**: virus (varicella zoster)

• **Mode of transmission** by droplet, direct or in direct contact

Clinical manifestation :-

1-Mild fever 2-Anorexia 3-headache

4- Rash: Macules, papules, vesicles, crusts.

5- Itching of the skin.

Treatment:

1 - No specific treatment.

2- Antibiotics for secondary infection.

3- Calamine lotion, antihistaminic, local anesthetic for itching.

Nursing care :-

1 - Isolation, use medical aseptic techniques.

2- Clothes and linens are currently disinfected.

3- Check vital signs? and record it.

4- Intake and output chart must be kept accurately.

5- Observe complications.

6-Use lotions, nails must be clean and short.

7- Cleansing of the skin according to doctors order, once or twice daily

Complications :-

1- Abscess.

2- Encephalitis.

3- Glumerulo-nephritis may occur.

Prevention:- None

2- Measles (Rubeola)

- **Incubation period:** from 10-12days
- **Communicability period:** 4 days before and 5 days after rash appears.
- **Causative agent:** virus.
- **Mode of transmission:** direct contact, droplets, and contaminated dust.

Clinical manifestation

1 - Coryza. As common cold characterized by fever, sneezing, cough, conjunctivitis- photophobia, inflammation of the mucus membrane of the nose, enlarged posterior cervical lymph nodes and decreased leukocyte count.

2- Koplik's spots: whitish spots resting on a reddish base appear on the opposite molars inside of the month

3- Rash: appears on the 2nd to 5th day and remains about a week it appears first on

the face, behind the ears, on the neck, forehead or cheeks, then spreads down ward

over the rest of the body, it is pinkish in color and becomes dark in color on the 5^{th}

day, Desquamation my occur and rash is itchy.

Treatment

1 - Symptomatic treatment

2-Antibacterial therapy

Nursing care :-

1 - Isolation

2- Bed rest

3- Eye care

4-Check vital signs

5-Mouth care

6- Application of ointment as prescribed

7- Observe complication

Complications

1-Otilis media

2- Encephalitis

3- Tracheo-bronchitis

4- Pneumonia

Prevention: Immunization

3- German Measles (Rubella)

Incubation period: from 12-14 days

Communicability period, during prodromal period to 5 days after rash appears

Causative agent : virus

Modes of transmission : by droplet, direct or indirect contact through contaminated dust or utensils, with nose and throat secretions of infected persons .

Clinical manifestations:

1 - Mild fever drops when rash appears

2- Slight malaise

3- Rash which appears on face and spreads down wards, it is small pink or pale red macules that are grouped together and disappear after 3 days

4- Swelling of posterior cervical and occipital lymph nodes

Treatment:

Symptomatic treatment

Nursing care

1 - Isolation

2- bed rest

3-Skin care

Complications :

1- Fetus damage if mother contacts the disease during pregnancy .

2- Newborn may has congenital anomalies such as deafness, micro-cephaly, retardation

3- Encephalitis

Prevention :

- Vaccination [Active immunization]
- Gamma globulin [Passive immunization]

4- Mumps (infections parotitis)

- Incubation period : from 14-28 days

- Communicability period : one to six day before the first symptom is appear until the swelling is disappears

- It is commonly in children from 5 to 10 years

- Causative agent: virus

-**Mode of transmission** : direct or indirect contact with salivary secretion of the infected person.

- Clinical manifestations :

1 - Coryza: low grade fever , vomiting , Headache , Malaise and anorexia

2- pain in or behind ears and pain on swallowing or chewing .

3- swelling and pain in salivary glands returns to normal in 10 days .

-Treatment:

Symptomatic treatment and sedatives

-**Nursing care**:

1 - Isolation 2- Bed rest

3- Local application of cold compresses

4- Soft diet or liquid 5- Anti pyretic for fever

6-Mouth care frequently

-Complications;-

Deafness - sterility - ovaritis and inflammation of tests

-Prevention

By immunization

5- Poliomyelitis ; (infantile paralysis)

It attacks the brain stem and spinal cord.

- **Incubation period :** from 5-14 days
- **Communicability period** : during period of infection to first week of acute illness
- **Causative agent :** virus
- **Mode of transmission** ; oral contamination by intestinal and pharyngeal secretions of the infected person

Clinical manifestation :

1 - Upper respiratory tract infection

2- Headache , vomiting, and fever

3- Stiffness of neck, back, and limbs

4-Paralysis after 1-2 days mainly at limbs, muscles of the urinary and the bowel system can be affected, paralysis of the abdomen , chest and diaphragm can occur with the progress of the disease

5- Constipation or stool incontinent can occur

6- Urine incontinent may be present

Treatment:

Physiotherapy, administration of gamma globulin.

Nursing care

1- Isolation

2- Bed rest

3-observe rate and type of respiration

4-carerul positioning of the affected limbs .

5-change position

6- Application of heat to the affected muscles to relax them

7- For incontinence- skin care. catheter may be done

8- Soft diet should be offered, fluid or gavage feeding should be done

9- Treat fever and headache with aspirin

Complications :-

1 -Emotional disturbance

2-Gastric dilatation

3- Hypertension

Preventing

Immunization

6- Meningitis

Is an acute infectious disease characterized by, fever, inflammation of the meninges with accompanying stiffness of the neck and subsequent dysfunction of the *central nervous system.*

-Incubation period : from 2-10 days

-**Communicability period** ; until meningococcal are no present in mouth and nasal discharge.

-Causative agent: bacteria (Meningococcus)

- **Mode of transmission** : direct contact or droplet of the infected person

Clinical manifestation :

- Sudden onset of fever, headache, chills, convulsions, irritability, stiff neck, vomiting, delirium, stupor or coma, petechial and purpuric areas on the skin

Treatment:

- Crystallin sodium penicillin G
- Sulfonamides
- Sedatives .

Nursing care :

1- Close observation

2- IV fluid should be given

3- Daily measurement of head circumference

4- Good skin care

5- oxygen therapy

6- Check for convulsion , paralysis or change behavior

7- Suction may be required

8- Skin care and cold compresses

9- Eye care and month care

Complications

Otitis media - pneumonia - hydrocephalus - persistent headache and paralysis

Prevention: By immunization.

7- Viral hepatitis

Viral hepatitis is inflammation of the liver and caused by one or other of the hepatitis viruses. It is classified into five types they are A, B, C, E, D and E.

a- Hepatitis A virus:

It is highly infectious and spread through food born infection directly or indirectly.

Mode of transmission: Fecal, oral route.

Incubation period: 50 days.

Prognosis: Almost all patients make a fully recovery except 5%.

b- Hepatitis B virus:

It is very dangerous type.

Mode of transmission:

- Infected blood transmission and its products.
- Contaminated syringe and needle.
- Drug abusers who share needles.
- Saliva, urine, semen and vaginal secretions.
- Transplacental modes.

Incubation period: 120 days.

Prognosis: the virus may lead to chronic active hepatitis, chronic persistent hepatitis, and finally liver cirrhosis.

c- Hepatitis C virus:

Mode of transmission: As Hepatitis B virus.

Incubation period: It takes 3 months.

Prognosis: Chronic hepatitis, liver cell failure.

d- Hepatitis D virus:

It is small virus that need helpful such as virus B to appear.

Mode of transmission: As hepatitis B virus.

Incubation period: 45 days.

Prognosis: Active hepatitis, chronic persistent hepatitis, liver cell failure.

e- Hepatitis E virus:

- It is transmitted through contaminated water.
- It is similar to hepatitis A virus.
- It is common in childhood.

Incubation period: 45 days

Prognosis: Excellent prognosis has been done.

Clinical manifestations of hepatitis:

- It is vary from asymptomatic to severe clinical manifestation.

- It is classified into three stages:

1- **Preicteric stage**: It is include chills, headache, malaise and gastro-intestinal tract disturbances as vomiting, anorexia, and diarrhea.

2- **Icteric stage:** It is represented in right upper abdominal pain, jaundice, splenomegaly and liver enlargement, dark urine, and the stool become pale. Artheralgia, and arthritis strongly suggested hepatitis B virus.

3- **Recovery stage**: All symptoms return within normal for few months.

Investigations:

- Liver profile (SGPT, SGOT, bilirubin, albumin) are elevated.
- Hepatitis markers are elevated.
- Prothrombin time is decreased.

Medical management:

- No specific treatment is available, supportive therapy is described.
- Corticosteroids have been prescribed in viral hepatitis.
- Antiemetic drugs.
- Sedatives and alcohol should be avoided.

Nursing management:

- Bed rest.
- Diet: A good diet contains high K, Ca, fruit, drinks, and

carbohydrates were acceptable within moderate amount of protein.

- Low amount of fat.
- All food articles used should be personal in hepatitis A virus.
- Preventive measures should be followed in hepatitis B and C.
- Immunization against hepatitis B virus by serum immunoglobulin at first 2, 4, and 6 months.