

Unit 1 normal microflora of the human body and host
pathogen interactions.

We will be studying carriers and their types module 12.

The outline. Important

definitions. Carriers and their

types. We will be studying the basics of infection and

special reference will be laid on opportunistic infections

and nosocomial infections.

At the conclusion of this presentation, the student will

be able to comprehend and identify different types of

Carriers and infections. And Understand the factors

involved in infection with special regard to

opportunistic and nosocomial infections.

Communicability communicability is the ability of a microbial

parasite to be transmitted from one host to another.

The ability of said pathogen to cause disease in a host is

termed as virulence.

Now violence will differ from one host to another.

It is important to note that communicability and virulence is

not the same.

The state in which a microbial parasite has succeeded in

setting up a home in the host by overcoming its innate defensive barriers is termed as infection.

And the study of the communicability of microbes

within a population is termed as

Epidemiology. Now the study of Epidemiology will enable us to

classify disease spread.

And it can be categorized as an epidemic. If there is a sudden

increase in the number of cases.

Endemic if cases are restricted to just a particular area.

It would be called a pandemic if there is an occurrence of cases

all over the world. While a disease outbreak would be called

sporadic if the disease occurs occasionally at irregular

intervals. Now the commonest source of infections in humans

Are humans themselves!

A pathogen may originate from a patient that is, a person

suffering from the illness or from a carrier.

Now what exactly is a carrier

A carrier is a person who harbors the pathogenic

microbes without suffering any effect

because of it.

You can categorize a carrier as a healthy carrier if the said

person does never suffered from the disease or a carrier may be called a convalescent carrier if he or she has recovered from a disease but continues to harbor the pathogen in the body.

You can also classify carriers based on the duration of

Carriage, a temporary or casual carrier, a chronic

carrier, a contact carrier, or paradoxical carrier. Now

a casual carrier is one who would harbor the microorganism temporarily, that is.

A few days, weeks or less than six months.

A chronic carrier would remain infected for several years and at times it also exists for the rest of their life.

A contact carrier would acquire the pathogen from the patient.

Whereas a paradoxical carrier is a person who acquires a pathogen from another carrier.

A primary infection is the initial infection of a host by a parasite.

If a new pathogen sets up an infection in a host who has a lowered resistance Such a pathogen is called an opportunistic pathogen and the infection would be called a secondary infection.

Now an opportunistic pathogen causes disease in what we call a

compromised host. A host could be compromised because of many reasons. Amongst them, malnutrition. Alcoholism cancer diabetes. Perhaps another infectious disease already existing. Trauma as a result of surgery or an injury.

A compromised host would also be someone who has an altered normal microbiota. Now this would be a result of prolonged antibiotic use, which would compromise the immune system.

A compromised host would also be one who is immuno suppressed. immuno suppression may be a result of an infection like HIV. It could also be a result of hormonal therapy.

What exactly is an opportunistic pathogen?

An opportunistic pathogen.

Is an Organism that is part of the normal microbiota of the host. But in cases becomes pathogenic and it could produce disease under certain circumstances.

Such a pathogen is adapted to non invasive survival in its niche on the host.

But if introduced into the bloodstream or in tissue can cause a disease.

Now, based on the source, infections could also be

classified as endogenous if the source is within the host body, and contrastingly if it is outside the host body. It would be called an exogenous infection.

Based on clinical effects, an infection may be classified as inapparent. Where clinical effects are not evident.

It may be classified as atypical. Typical manifestations are not seen, or a latent infection.

A latent infection is an infection wherein the microbes remain hidden in the tissues they proliferate and they produce the clinical disease. When the host resistance is lowered.

Infections may also be classified as acute.

Which develop rapidly.

Chronic infections which develop slowly with milder but longer lasting symptoms or local infections where the causative agent is limited to just one area of the body.

A systemic infection would be an infection that has spread throughout the body.

Now. You can have a new infection set up from another host or from an external source, and this would occur in a patient already suffering from a pre-existing disease.

This is termed as a cross infection. Now when a cross infection occurs in the hospital in the medical set up, it would be termed a nosocomial or a hospital acquired infection.

Such infections would occur due to various reasons.

For one patients have weakened resistance to infectious diseases.

Following that, you can also consider that patients in the hospital serve as reservoirs of highly virulent pathogens.

In the setup, patients may be crowded and thus facilitate easy dissemination of organisms.

The movement of hospital personnel from one patient to another serves as a means of contact between patients and therefore transmission of pathogens.

Hospital procedures also increase the risk of introducing pathogens into patients.

Procedures like catheterization etc.

The use of drugs may create antibiotic resistant organisms and these cause severe disease in immunocompromised patients.

Surgical procedures that take place in a hospital would expose the interior of the body to contamination by pathogens.

So to summarize.

You have studied important

definitions. You have studied the types of carriers based on

health and duration of carriage.

We have studied different types

of infection. Chief amongst them nosocomial or hospital acquired.

We have spoken about various sources of pathogen which

could be endogenous or exogenous and we also touched

upon opportunistic pathogens.

You can refer to any of the prescribed textbooks as I

have listed.

Thank you.