

**Manuscript no.-** JMMD-2021-3

**Article type-** Editorial

**Received date-** 20-01-2021

**Accepted-** 20-01-2021

**Publish date-**23-01-2021

## **Editorial Note on Medical Microbiology & Diagnosis – Microbiology and Pathology**

**Tirpude RJ**

Defence Institute of Physiology and Allied Sciences

**Address for Correspondence:** Tirpude RJ, Defence Institute of Physiology and Allied Sciences, Delhi - 110054, India. Tel-9869217101, E-mail: [rtirpude@gmail.com](mailto:rtirpude@gmail.com)

### **Editorial**

Microbiology is the study of microscopic organisms. They may be unicellular, multicellular or acellular. Pathology is the branch of medical sciences that deals with the examination of organs, tissues, and body fluids for the diagnosis of disease. Pathology describes the scientific study of disease which can be described as any abnormality that is causing changes in the structure or function of body parts. In pathology, the causes, mechanisms and extent of disease may be examined. The resulting changes in the structure or function of a body part and significance of the disease are also considered.

Medical microbiology involves the identification of microorganisms for the diagnosis of infectious diseases and the assessment of likely response to specific therapeutic interventions. Major categories of organisms include bacteria, mycobacteria, fungi, viruses, and parasites. Microbiological methods combined with clinical symptoms, additional laboratory tests, and imaging techniques are used in combination to distinguish a true disease-associated infection from colonization with normal flora or other conditions, such as malignancies, inflammatory disorders, or autoimmune disorders, all of which have unique therapies and prognoses for the patient. Laboratories combine the use of traditional microscopy and culture methods, with a rapidly evolving set of molecular and proteomic techniques. Given the increase in immunocompromised patients due to an increase in transplantations, the human immunodeficiency virus epidemic, and the use of immunosuppressive agents to treat autoimmune disorders, diagnosis of microbial infections continues to be essential for many patients.

Pathology is a branch of medical science that involves the study and diagnosis of disease through the examination of surgically removed organs, tissues (biopsy samples), bodily fluids, and in some cases the whole body (autopsy). Pathologists specialize in a wide range of diseases including cancer and the vast majority of cancer diagnoses are made by pathologists. The cellular pattern of tissue samples are observed under a microscope to help determine if a sample is cancerous or non-cancerous (benign). Pathologists also employ genetic studies and gene markers in the assessment of various diseases.

### **Types of Pathology**

#### **Surgical Pathology**

Surgical Pathology is the most significant and time consuming branch of pathology with a primary focus on examining tissues with the naked eye or under a microscope for definitive diagnosis of disease. Surgically removed specimens are received from sources such as small biopsies of skin, core biopsies for the diagnosis of cancer, and the operating room where tumours are removed. Surgical pathology involves macroscopic (gross) and microscopic (histologic) tissue analysis where the molecular properties of tissue samples are assessed by immunohistochemistry or other laboratory tests.

#### **Cytopathology**

Cytopathology is a branch of pathology that studies and diagnoses diseases on the cellular level. It is usually used to aid in the diagnosis of cancer, but also helps in the diagnosis of certain infectious diseases and other inflammatory conditions.

### **Molecular Pathology**

Many diseases such as cancer are caused by mutations or alterations in the genetic code of a person, and identification of specific hallmark mutations allows clinicians to classify a disease and choose the appropriate treatment. As a result, molecular analysis is leading the way towards personalized medicine by allowing us to predict a patient's response to certain anti-cancer therapy based on their own genetic make-up.

### **Related Journals of Microbiology and Pathology**

Journal of Medical Microbiology & Diagnosis, Journal of Clinical & Experimental Pathology, Journal of Medical Diagnostic Methods, Journal of Infectious Diseases & Therapy, Translational Medicine, Diagnostic Pathology, Indian Journal of Pathology and Microbiology, Plant Pathology & Microbiology, Clinical Journal of Microbiology and Pathology, Microbiology Journals, Pathology Journals, International Journal of Microbiology and Mycology, Jacobs journal of microbiology and pathology, Journal of Clinical Pathology, Journal of Pathology Informatics, International Journal of Oral and Maxillofacial Pathology.