

Role of Transfusion Medicine in Controlling the Spread of Infectious Diseases

Xuie Deng*

Department of Gastroenterology and Hepatology, Sichuan University, Sichuan, China

DESCRIPTION

Diseases which are known as infectious diseases are brought on by pathogens, which are dangerous germs that enter your body from external sources. Infectious diseases are caused by pathogens such as bacteria, fungi, viruses, parasites, and, in rare cases, prions. Infectious diseases can be contracted by contaminated food, water, or soil, as well as from bug bites and other individuals. Bacteria and viruses are examples of pathogenic organisms that enter your body from the outside and cause infectious diseases. Noninfectious diseases are caused by aging, anatomical variations, genetics, and environmental factors rather than by external organisms. Noninfectious diseases cannot be contracted from other people, from a bug bite, or through food.

Infectious diseases include the flu, measles, HIV, strep throat, COVID-19, and salmonella. Noninfectious diseases include diabetes, Alzheimer's disease, cancer, and congestive heart failure. Blood transfusions can spread a number of disorders known as Transfusion-Transmitted Diseases (TTD). The majority of the different etiologic agents are viruses and parasites. For instance, blood transfusions from an infected person can spread the hepatitis B virus and the Human Immunodeficiency Virus type 1 (HIV-1), which can lead to the receiver developing acquired immunodeficiency syndrome and chronic hepatitis, respectively.

The most significant and deadly agents of Transfusion-Transmitted Infections (TTIs) include the Hepatitis B Virus (HBV), Hepatitis C Virus (HCV), Human Immune Deficiency Virus (HIV), and syphilis. TTIs continue to pose a significant worldwide health care burden. Given that the disease is frequently dormant and silent until presenting clinically, estimating incidence rates worldwide is challenging. Therefore, there is a chance that any blood transfusion could expose the recipient to infectious illnesses.

Transfusion of blood is a therapeutic treatment because there isn't a true alternative. However, tainted blood transfusions can kill rather than save lives by spreading infectious diseases. An efficient, high-quality healthcare system's foundation is its ability to provide safe blood transfusion services, which call for a well-

organized infrastructure, appropriately educated and trained personnel, the availability of pricey equipment and high-quality reagents, and a steady supply of electricity. It is crucial to note that TTIs are linked to low virus titers, which is why screening blood donors using molecular mean was thought to be a more accurate way of detection.

There is a dearth of information regarding the safety of the blood transfusion procedure in many countries, and most blood banks fail to provide safe services in accordance with World Health Organization (WHO) guidelines. A disorganized transfusion network most certainly plays a major role in the spread of these dangerous infectious illnesses. Poverty made the risks of blood transfusions much more severe because, in the limited blood banks that exist, the recipient's willingness to pay for the screening process determines whether or not the selected blood sample is screened. Thus, it is essential to conduct thorough TTI screening on blood donors in order to guarantee a secure supply of blood and blood products.

You can lower your chance of contracting an infectious disease and even completely avoid some illnesses by following a number of easy steps. There is rarely a single strategy that is 100% successful at preventing disease, even while each of these lowers your chance of contracting and spreading infectious diseases. For this reason, it's critical to develop a variety of habits that lower your risk. By teaching your immune system to identify and combat infections from dangerous invaders, vaccinations lower your chance of contracting an infectious disease. Even though vaccinations don't always prevent people from getting sick, when you do become sick after receiving one, your symptoms are typically milder than they would have been otherwise. Treatment is based on the infection's cause. Occasionally, the doctor may advise keeping an eye on the symptoms instead of prescribing medicine.

Antibiotics can be used to treat bacterial illnesses. The type of bacteria causing the infection determines the appropriate medication. In certain situations, the doctor may recommend oseltamivir phosphate, often known as Tamiflu, if you have the flu. Antiretroviral therapy is one type of drug used to treat certain

Correspondence to: Xuie Deng, Department of Gastroenterology and Hepatology, Sichuan University, Sichuan, China, E-mail: xuedeng@xdsuc.cn

Received: 06-Nov-2023, Manuscript No. IME-23-28981; **Editor assigned:** 09-Nov-2023, PreQC No. IME-23-28981 (PQ); **Reviewed:** 23-Nov-2023, QC No. IME-23-28981; **Revised:** 30-Nov-2023, Manuscript No. IME-23-28981 (R); **Published:** 08-Feb-2023, DOI: 10.35248/2165-8048.23.13.438

Citation: Deng X (2023) Role of Transfusion Medicine in Controlling the Spread of Infectious Diseases. Intern Med. 13:438.

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viral infections. Antifungal drugs can be used to treat fungal infections. Some, like fluconazole (Diflucan), are oral, while others, like clotrimazole (Lotrimin), are topical, and applied directly to

the site of the fungal growth. Mebendazole (Emverm) is one antiparasitic medication that can be used to treat parasites.