

**RADIOLOGIC MANIFESTATIONS  
OF  
ACQUIRED IMMUNODEFICIENCY  
SYNDROME**

Essay

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The Master Degree of Radiodiagnosis

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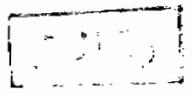
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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قالوا سبحانك لا علم لنا إلا ما علمتنا  
إنك أنت العليم الحكيم

"صدق الله العظيم"



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**To My  
Family**

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**Introduction  
and  
Aim of the Work**

## Introduction and Aim of the Work

Acquired immunodeficiency syndrome (AIDS) refers to the condition in which multiple, life - threatening opportunistic infections or Kaposi's sarcoma, or both, occur in patients without a history of primary or iatrogenic immunodeficiency. (Griffith RC. et al, 1990).

It was found to be due to infection with the human immunodeficiency virus (HIV) (Adams JH. et al, 1992).

This study aims at studying the different radiological manifestations of these infections and neoplasms occurring in AIDS.

## Pathology

## PATHOGENESIS OF THE ACQUIRED IMMUNODEFICIENCY SYNDROME :

This syndrome results from infection by a retrovirus, the human immunodeficiency virus I (HIV - 1) previously referred to as human T - cell lymphotropic virus type III (HTLV - III), lymphadenopathy - associated virus (LAV), or AIDS related virus (ARV).

HIV is related to the group of nontransforming, cytopathic lentiretroviruses. More recently, HIV - 2, which has 60% homology with HIV-1, has been described as a cause of AIDS - like disease. HIV appears to exhibit unusual biologic variability.

Some population groups have been identified as being at high risk for developing AIDS include :

Homosexual men, intravenous drug users, haemophiliacs, 2% of AIDS cases have been associated with blood transfusions, heterosexual transmission to women having sexual contact with documented HIV - infected persons and congenital transmission to offspring.

The virus infects at least two cells after entering the body, the CD4+ T - lymphocytes and mononuclear phagocytes, which also express the CD4 antigen and include the microglia of the central nervous system.

After binding to the CD4 molecule and entering the cell, the virus may have a cytotoxic effect either directly or indirectly upon activation of the cell by concomitant infection or allogeneic cells.

This depletion of CD4+ T - cells, is paramount in causing the immunodeficient state.

The virus tends to accumulate within monocytes and remain insulated from antiviral immune responses. Monocytes appear to be important reservoirs for HIV within the body and may have a role as a vehicle in its transmission, since only a fraction of T - cells and as many as 15% of monocytes express viral protein, indicating infection.

The demonstration of antibodies to HIV by ELISA assay is the basis of routine HIV screening. Antibodies are not usually demonstrable for 4 to 8 weeks in newly infected, infectious individuals.

- Incubation Period :

The mean incubation period appears to be long and is estimated at 7.8 years for homosexual men and 8.2 years for transfusion - associated AIDS.

- Clinical picture of HIV infection :

It is classified by the Centers for Disease Control which provides the basis for the definition of AIDS.

| Group | Characteristics                           |
|-------|---|
| I     | Acute infection                           |
| II    | Asymptomatic infection                    |
| III   | Persistent generalized<br>lymphadenopathy |
| IV    | Other disease                             |
| A     | Constitutional disease                    |
| B     | Neurologic disease                        |
| C     | Secondary infection                       |
| D     | Secondary neoplasia                       |
| E     | Other conditions                          |

Classification for HIV infection

(Griffith RC. et al, 1990)