

## LIST OF TABLES

Table	Page
<b>(I)</b> CDC Classification System for HIV-Infected Adults and Adolescents.	<b>6</b>
<b>(II)</b> WHO Clinical Staging of HIV/AIDS for Adults and Adolescents.	<b>8</b>
<b>(III)</b> Antiretroviral Groups.	<b>24</b>
<b>(IV)</b> Summary of recommendations on when to start ART in adults, adolescents, pregnant and breastfeeding women and children according to WHO 2013 recommendation	<b>25</b>
<b>(V)</b> Summary of first-line ART regimens for adults, adolescents, pregnant and breastfeeding women and children.	<b>26</b>
<b>(VI)</b> Summary of preferred second-line ARV regimens for adults, adolescents, pregnant women and children.	<b>27</b>
<b>(VII)</b> Post-Exposure Prophylaxis Regimens.	<b>28</b>
<b>(VIII)</b> The distribution of HIV cases among the studied patients by some demographic data.	<b>36</b>
<b>(IX)</b> Distribution of HIV cases according to clinical presentations.	<b>38</b>
<b>(X)</b> Distribution of studied sample according to lab investigations.	<b>39</b>
<b>(XI)</b> Hematological parameters of the studied patients.	<b>40</b>
<b>(XII)</b> Distribution of studied sample according to imaging study.	<b>42</b>
<b>(XIII)</b> Relation between Pulmonary TB with X-ray.	<b>44</b>
<b>(XIV)</b> Distribution of studied sample according to toxoplasma antibodies.	<b>45</b>
<b>(XV)</b> Distribution of studied sample according to Pulmonary TB, toxoplasmic encephalitis, oropharngal candidiasis, kaposi sarcoma and diarrhea.	<b>46</b>
<b>(XVI)</b> Distribution of studied sample according to infectious pathogens of diarrhea.	<b>48</b>
<b>(XVII)</b> Distribution of studied sample according to CD4 classification of CDC	<b>50</b>
<b>(XVIII)</b> Distribution of studied sample according to CD4 in another way.	<b>51</b>
<b>(XIX)</b> Relation between CD4 with pulmonary TB, toxoplasmic encephalitis, oropharngal candidiasis, kaposi sarcoma and diarrhea.	<b>52</b>
<b>(XX)</b> Relation between CD4 with infectious pathogens of diarrhea.	<b>53</b>
<b>(XXI)</b> Relation between opportunistic infections and CD4 according to CDC	

classifications	<b>54</b>
<b>Table</b>	<b>page</b>

---

<b>(XXII)</b> Relation between opportunistic infections and CD4 according to the other classification	<b>55</b>
<b>(XXIII)</b> Relation between infectious pathogens of diarrhea and CD4 according to CDC classifications.	<b>56</b>
<b>(XXIV)</b> Relation between infectious pathogens of diarrhea and CD4 in other classifications	<b>57</b>
<b>(XXV)</b> Relation between chest X-RAY and CD4 according to CDC classification.	<b>58</b>
<b>(XXVI)</b> Relation between chest X-RAY and CD4 in another classification.	<b>59</b>
<b>(XXVII)</b> Relation between ultrasound abdomen and CD4 according to CDC classification	<b>60</b>
<b>(XXVII)</b> Relation between ultrasound abdomen and CD4 according to the other classification	<b>61</b>
<b>(XXIX)</b> Relation between chest X-RAY in pulmonary TB cases and CD4 according to CDC classification.	<b>62</b>

## LIST OF FIGURES

Figure	Page
1. HIV structure.	1
2. HIV as viewed by electron microscopy.	2
3. Adult HIV prevalence rate, 2013	2
4. The life cycle of HIV and its mechanism of infection.	4
5. Timeline of CD4 T-cell and viral-load changes over time in untreated human immunodeficiency virus (HIV) infection.	5
6. Scheme MOHP Protocol for HIV Testing.	22
7. The distribution of HIV cases among the studied patients by sex	37
8. The distribution of HIV cases among the studied patients by age	37
9. Distribution of studied sample according to clinical presentations	38
10. Hematological parameters of the studied patients.	41
11. X-ray finding in the studied patients.	43
12. Ultrasound of the studied patients.	43
13. CT brain show multiple enhancing brain lesions a male patient HIV and CNS toxoplasmosis with CD4 count 50 cells/mm <sup>3</sup>	43
14. Relation between Pulmonary TB with X-ray.	44
15. X-ray chest show ground glass appearance of 32 years female patient has HIV and miliary TB with CD4 count 73cells/mm <sup>3</sup> .	45
16. Distribution of studied sample according to oropharngelial candidiasis, Pulmonary TB, diarrhea, kaposi sarcoma and toxoplasmic encephalitis.	46
17. 31years old, male HIV patient has Kaposi sarcoma on the tongue with CD4 count 227cells/mm <sup>3</sup> .	47
18. 41years old, male HIV patient has Kaposi sarcoma on the arm with CD4 count 74 cells/mm <sup>3</sup> .	47
19. 46years old, male HIV patient has oral candida with CD4 35 cells/mm <sup>3</sup> .	47
20. Distribution of studied sample according to infectious pathogens of diarrhea.	48
21. Modified acid fast stain shown the oocyst of <i>cryptosporidium</i> in 31years old male HIV patient with CD4 count 11 cells/mm <sup>3</sup> .	49
22. Modified acid fast stain shown the oocyst of <i>cyclospora</i> in 25 years old, female patient has diarrhea with CD4 73 cells/mm <sup>3</sup> .	49
23. Modified trichrome stain shown spores of <i>microsporidia</i> in 46 years old, male patient has diarrhea with CD4 35cells/mm <sup>3</sup> .	49
24. Distribution of studied sample according to CD4	50

<b>Figure</b>		<b>Page</b>
25.	Distribution of studied sample according to CD4.	<b>51</b>
26.	Relation between CD4 with pulmonary TB, toxoplasmic encephalitis, oropharngal candidiasis, kaposi sarcoma and diarrhea.	<b>52</b>
27.	Relation between CD4 with infectious pathogens of diarrhea	<b>53</b>
28.	Relation between opportunistic infections and CD4 according to CDC classification.	<b>54</b>
29.	Relation between infectious pathogens of diarrhea and CD4 according to CDC classification	<b>56</b>
30.	Relation between chest X-RAY and CD4 according to CDC classification.	<b>58</b>
31.	Relation between ultrasound abdomen and CD4 according to CDC classifications	<b>60</b>
32.	Relation between chest X-RAY in pulmonary TB cases and CD4 according to CDC classification.	<b>63</b>

## LIST OF ABBREVIATIONS

<b>3TC</b>	:	Lamiduvine
<b>ABC</b>	:	Abicavir
<b>AFB</b>	:	Acid-Fast Bacilli
<b>AIDS</b>	:	Acquired Immunodeficiency Syndrome
<b>ALT</b>	:	Alanine Amino Transferase
<b>ART</b>	:	Antiretroviral Treatment
<b>ARV</b>	:	Antiretroviral
<b>AST</b>	:	Aspartate Amino Transferase
<b>AZT</b>	:	Zidovudine
<b>BID</b>	:	Twice a Day
<b>BUN</b>	:	Blood Urea Nitrogen
<b>CBC</b>	:	Complete Blood Count
<b>CCR5</b>	:	Chemokine co-receptors
<b>CD4</b>	:	Cluster of Differentiation 4
<b>CDC</b>	:	Center for Disease Control
<b>CNS</b>	:	Central Nervous System
<b>CRF</b>	:	Circulating Recombinant Forms
<b>CSF</b>	:	Cerebrospinal Fluid
<b>CT</b>	:	Computed Tomography
<b>D4T</b>	:	Stavudine
<b>Ddi</b>	:	Didanosine
<b>DNA</b>	:	Deoxyribose nucleic Acid
<b>DOT</b>	:	Directly Observe Therapy
<b>EFZ</b>	:	Efavirenz
<b>ELIZA</b>	:	Enzyme Linked Immunosorbent Assay
<b>EMB</b>	:	Ethambutol
<b>FBL</b>	:	focal brain lesion
<b>GB</b>	:	Glycoprotein
<b>HAART</b>	:	Highly Active Antiretroviral Therapy
<b>HIV</b>	:	Human Immunodeficiency Syndrome
<b>HTLV-1</b>	:	Human T-lymphotropic virus type 1
<b>IDV</b>	:	Indinavir

<b>IgG</b>	: Immunoglobulin G
<b>IgM</b>	: Immunoglobulin M
<b>IGRA</b>	: Interferon-Gamma Release Assays
<b>INF<math>\alpha</math></b>	: Interferon-alpha
<b>INH</b>	: Isoniazid
<b>INSTI</b>	: Integrase Strand Transfer Inhibitors
<b>IRIS</b>	: Immune reconstitution inflammatory syndromes
<b>IUD</b>	: Injecting Drug Users
<b>KS</b>	: Kaposi sarcoma
<b>KSHV</b>	: Kaposi's sarcoma-associated herpesvirus
<b>LANA</b>	: Latency-Associated Nuclear Antigen
<b>LPV/r</b>	: Lopinavir/ritonavir
<b>LTBI</b>	: Latent TB Infection
<b>NNRTIs</b>	: Non-Nucleoside Reverse Transcriptase Inhibitors
<b>NRTIs</b>	: Nucleoside Reverse Transcriptase Inhibitors
<b>NtRTIs</b>	: Nucleotide Reverse Transcriptase Inhibitors
<b>NVP</b>	: Nevirapine
<b>OIs</b>	: Opportunistic Infections
<b>OPC</b>	: Oropharyngeal Candidiasis
<b>PCP</b>	: Pneumocystis Carinii Pneumonia
<b>PCR</b>	: Polymerase Chain Reaction
<b>PEP</b>	: Post Exposure prophylaxis
<b>PGL</b>	: Persistent Generalized Lymphadenopathy
<b>PID</b>	: Pelvic Inflammatory Disease
<b>PIs</b>	: Protease Inhibitors
<b>PML</b>	: Progressive Multifocal Leukoencephalopathy
<b>PO</b>	: Orally
<b>Prep</b>	: Pre-exposure Prophylaxis
<b>PZA</b>	: Pyrazinamide
<b>QID</b>	: Four Times a Day
<b>RBC</b>	: Red Blood Cell
<b>RFB</b>	: Rifabutin
<b>RIF</b>	: Rifampin

<b>RNA</b>	:	Ribonucleic Acid
<b>RTV</b>	:	Ritonavir
<b>SQV</b>	:	Saquinavir
<b>TB</b>	:	Tuberculosis
<b>TDF</b>	:	Tenofovir
<b>TE</b>	:	Toxoplasmic Encephalitis
<b>TMP-SMX</b>	:	Trimethoprim/sulfamethoxazole
<b>TST</b>	:	Tuberculin Skin Test
<b>UNAIDS</b>	:	United Nation of Acquired Immunodeficiency Syndrome
<b>WB</b>	:	Western Blot
<b>WBC</b>	:	White Blood Cell
<b>WHO</b>	:	World Health Organization