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Assessmento fadheranceb yhealthcareproviderst owhoTenofovirgu ildlinesatlevy Mwanawasa Generalhospital

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ABSTRACTIntroduction:-
Theuseoftenofovirinhiv/Aidspatientshasbeenassociatedwithnephrotoxicity.sisexacerbatedbyirregularmonitoringtendenciesbyhealthcareproviders.ThisisdespiteofTheworldhealthorganizationintroducingtreatmentguidelinesontheuseoftenofovir.Thestudy Is Aimed At Assessingtheadherencebyhealth Careproviders On WHO Tenofovirguidelines.
Generalobjectives:Thestudyassessedifhealthcareprovidersadheredtothewhotreatment Protocolsofrequestingforrenalfunctiontestsinhiv/Aidspatientsontenofovirbasedregimen, At 2 Weeks Beforeinitiatingtreatment, At 3 Monthsand 6 Monthsafter Initiatingtreatment.
Methodology:Thestudywasaretrospectivecross-Sectionalsurveywhichinvolvedareview of Patientfilesof322studypatientswhowereontenofovirbasedregimenatlevy mwanawasaGeneralhospital.Thevariablesofthestudywereanalyzedusingstatisticalpackageforsocial ciences(SPSS)Version16.0.
Results:ThestudyReviewedasignnonAdherencebyHealthcareproviderstotreatmentProtocols.Atbaseline92.5%Of patientshadtheircreatinineresultsavailableintheirfileswhile
7.5% Didnot Have Creatinine Results At Baseline. A Followup At 3 Months Afterinitiating Treatmentreviewedthat68%Hadtheircreatinineresultsintheirfileswhile32%Didnothavetheir Creatinineresultsontheirfilesthisshowedagradualdecrease Inthelevelsof AdherenceToTreatmentprotocols.Anotherfollowupat6monthsaftertreatmentreviewedasteady IncreaseinAdherencelevelswhere82%Hadtheircreatinineresults ontheirdoneandresultswere Available Ontheirfiles.

I. CONCLUSION

Thestudyshowedanonherencebyhealthcareproviderstotreatmentprotocols.Althoughcliniciansweremakingrequestingforcreatininetests,Somepatientsdidnothavecreatinine Resultsintheiresthismeantthatthesepatients wereBeinggivenmedicationwithoutacloseRenalmonitoring,Thisposedagreaterrisktothesepatientsastheycouldd evelop renalinjuryetohenephrotoxicitythatIscausedBytenofovir.Althoughthestudywasasuccess,Andtheinstitutionwherethisstudy Wasbeingcarriedoutwasmmittedtoprovidingqualitypatientcareinthemidstoflimitedresources,Manpowerandother Challenges,Theimportanceofrenalcreatinineclearancemonitoring Inpatientsontenofovirbased Regimen ShouldBeasized.IntroductionTheintroductionoftheantiretroviraldrugshasgreatlyimprovedonthequalityoflifeandalsoonThelifeexpectancyofmanypeoplethatarelivingWithhivvirus.Muchasthesedrugsareservinglivesofpeople,Theyalsocausemanyadverseeffectsandtoxicitiesthatdemandregularrenal MonitoringEspeciallyinPatientsTakingTenofovirbasedRegimenWhoRequireRoutineRenaltoring(Mulengaetal,2014).Theuseoftenofovirhasbeenassociatedwithdevelopment Ofrenal Impairment, (Hall, 2012;Judda,2010),AsSuchBaselineRenalFunctioningTestsAre Requiredtobeconductedpriortocommencementoftreatmentandthereafterregularmonitoring Is Required At SpecifiedIntervals(Cooper,2010).AstudydoneinaustraliarevealedthathivinfectedindividualshaveahigherriskofdevelopingBothacuteandchronicrenalfailurethanthegeneralpopulation,Especiallythoseontenofovir Basedtherapy(Holt,2014).Sincetheintroductionoftenofovirin2002inAustralia,AseriesofCasereportsandlargepopulationstudieshavereviewedits nephrotoxicpotentialinhiv/AIDSPatients,(Holt,2014).Withtheincreaseduseofart,Cliniciansmustroutinelyscreenpatients foThedevelopmentofrenaldiseaseespeciallyiftheregimenemployedincreasestheriskofrenalInjury.(Perazella,2011).Studiesdonereviewthatmostpatientsontenofovirbasedregimentendto Developrenaldamagewithinthefirst36monthsofTreatment.HenceTheneedforregularrenalCreatinineclearancemonitoring(WHO, 2010), (MOH, 2014).In2007theministryofhealthinZambiaintroducedtheuseoftenofovirbasedregimenasthefirstLineoftreatmentinhiv.Tenofovirwasbeingwidelyusedinmanydevelopedcountriesandalso Inresourcelimitedcountriesbecauseofitsprovenefficacy Onhivviralsuppression,Its Tolerability,

Safety,ItsabilityTobecoFormulatedwithotherdrugsandithasalsoassociatedwithdelayedDevelopmentofdrugresistance.(Mulengaetal,2014;Chabala,2015).Accordingtotheministryof Healthhivtreatment Protocols, Onceapatient WasdiagnosedwithHIV,RenalFunctiontestisSupposetobeconducted2weeksbeforecommencingtreatment,Thenat3 months,6monthsandThenAnnually(WHO,2014).ManyStudiesdoneontenofovirhaveonlyFocusedonitsassociated nephrotoxicpotentialinHIV/Aids,Patients(Peyrière,2004;Isabelle,2013;Horberg,2010).AnumberOfresearchersHaveecommendedontheneedforclinicianstoroutinelyperformbaselinerenalmonitoringinthese Patients. Therefore,Thisresearchstudywillassessedtheadherenceofhealthcareprovidersinmonitoring Renalcreatinineclearanceinhiv/Aidsadultpatientsontenofovirbasedregimen.Findingsof This Studywould Helpin Mitigatingthedevelopment Ofearlyrenal Injury.

II. RESEARCH METHODS

Research Methodswereused To Meet Theobjectives Of The Study.

2.1 STUDY DESIGN

The Studywas A Cross-Sectional Surveywhich Aimed At Assessing Adherence Byhealth Care Providers On Requesting For Renal Creatinine Clearance Test In HIV/AIDS Adult Patients On Tenofovirbased Regimenatlevymwanawasahospital.

2.2. STUDYPOPULATION

Thestudypopulation Wasthe HIV/Aidspatientson Tenofovir Based Regimen.

2.3. STUDY SITE/LOCATION

Thestudywas Conductedatlevymwanawasageneral Hospital Inlusaka.

2.4. SAMPLE SIZEDETERMINATION

Thesamplesizeof Thepatientfiles Was Calculated Usingtheequation Below

$N=Z^2p\ (100-P)/\ E^2$

Wheren=Samplesize
P=The Prevalencewhichis 30%
E=Magnitudeof Tolerableerror (5%)
Z=Significancelevel (1.96 At 95%)

$N=1.96^2 30\ (100-30)/_5 2$

N=322 Files

2.5. Sampling Technique

Thepatient'sfilesweresampledusingasimplerandomsamplingmethod.ThelistoffileNumberswasenteredintheexcelspreadsheetforallthefilesthatmeettheinclusioncriteriafor Theperiodunderreview.Then,Inthecolumnrightnexttothe List,Thefunction=RAND()WasPasted.Thisisexcel'swayofputtingarandomnumberinthecells.Then,Sortedthecolumn Withlistoffile Numbers.Thisrearrangedthelistinrandomorderfromthelowesttothehighest Random Number. Then, The First 322 Files Wereisolated For Review.

2.6. Exclusionandinclusioncriteria

Inclusioncriteria

TheEligiblepatients Were:
I). HIV/Aids Patients Ontenofovir Basedregimenatlevymwanawasageneral Hospital. Ii). Patients Who Havebeen On ART Treatment From Atleast 6to 18 Months.

Exclusioncriteria

I). HIV/Aids Patients Who Arenot On Tenofovirbased Regimen

2.7. Procedure

Datawascollectedfromthepatientfilestodeterminewhethercreatinineclearancewasdone Accordingto Theprotocols.

2.8. Data Collection

Data Was Collected Fromthepatient Record Filesbyusingadata Collection Sheet.

Table 1: Variables With Their Associated Definitions And Scales Ofmeasurements

Type Variabl	**Definiti on**	**Of**	**Scale Ofmeasurement**	**Descriptiv e**	**Graphical Presentati**
Creatini n E Clearan	Creatin e Don e Prot	Cleara nce Accordi ng	Categorical 1=0 Months 2=3 Months	Percentage	Barcharts

AgeDefined AsagegroupCategorical

1=18-25yrs
2=25yrsand Above

PercentageBarcharts
Gender Definedasmaleand Female
Nominal
1=Male, 2=Female
PercentageBarchartsFoot Notes: The Table Shows 4 Variables Thatwereused In Thestudy

2.9. Dataanalysis
Thedatatobecollectedwasanalyzedusingthestatisticalpackageforsocialsciences(SPSS) Version 16.0.

2.10. Ethical Consideration
Clearancewasobtainedfromthenationalhealthresearchauthority.Confidentiality Wasassuredforallinformationthat Wascollectedandnoreferencewasmadetoindividual Patientsandnopatientfilewasbetakenaway Fromthehospitalpremise.Thecomputerwas Protectedwith Apassword To Avoid Unauthorized Access To Information.

RESTS
This Chaptergives Theresults Of The Followingobjectives Of Thestudy:

1. Toassessifcliniciansrequestedforserumcreatinineclearancetestsonthepatientat2weeksBeforeinitiatingtreatment.
2. To Assessif Clinicians Requested For Serum Creatinine Clearance Tests After 3 Months Of Commencingtreatment.
3. To Assessif Clinicians Requested For Serum Creatinine Clearance Tests After 6 Months Of TreatmentInthisstudy322participantswereincludedandmettheinclusioncriteria.ThenumberoffemaleParticipantswashigherthanthatofmaleparticipants,Ofthetotalparticipantsinthestudy172 (53.4%)Werefemalesand 150 (46.6%)Weremales.

31. CREATININE RESULTSAT BASELINE
Inthisstudy 92.5%(298/322)Ofpatientshadtheircreatininetestdone2weeksbeforethey Commenced Theirtreatment On A Tenofovir Basedregimen.

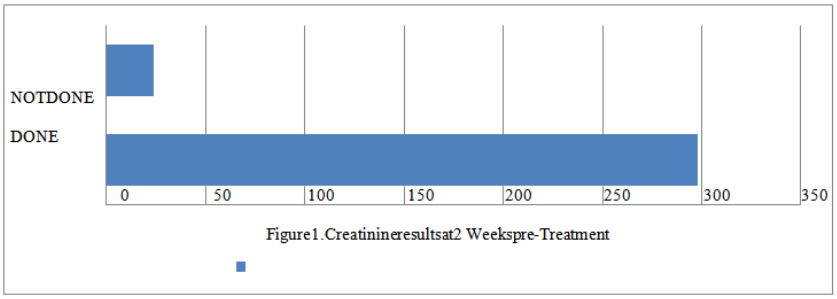
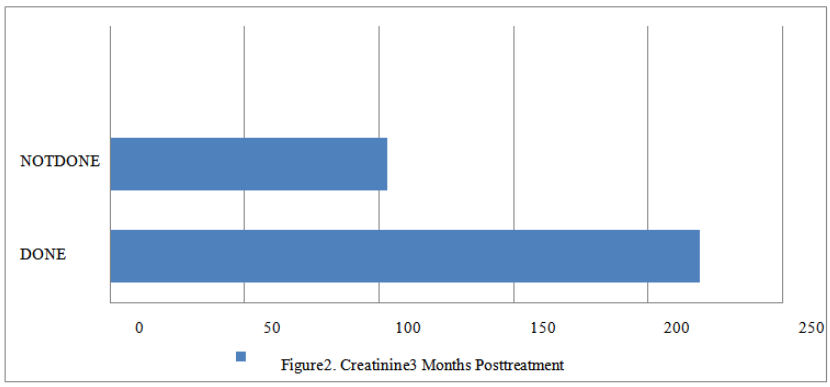


Figure1.Showscreatinine Results At 2 Weeks Before Commencement Oftreatment.

3.2. CREATININE RESULTS3 MONTHSPOST TREATMENT

Inthisstudy68.3%(219/322)Ofpatientshadtheircreatininetestdone3monthsaftertheyhad Initiated Treatment On A Tenofovir Based Regimen.



2.3. CREATININE RESULTS6 MONTHSPOST TREATMENT

Inthisstudy82%(264/322)Ofpatientshadtheircreatininetestdone6monthsaftertheyhad Initiated Treated On Atenofovirbased Regimen.

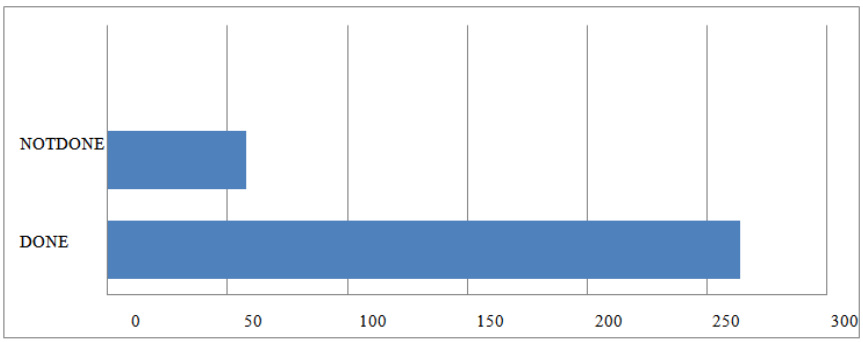


Figure3. Shows Creatinineresults 6 Months Post Treatment

DEMOGRAPHICSAND CHARACTERISTICSOFPARTICIPANTS

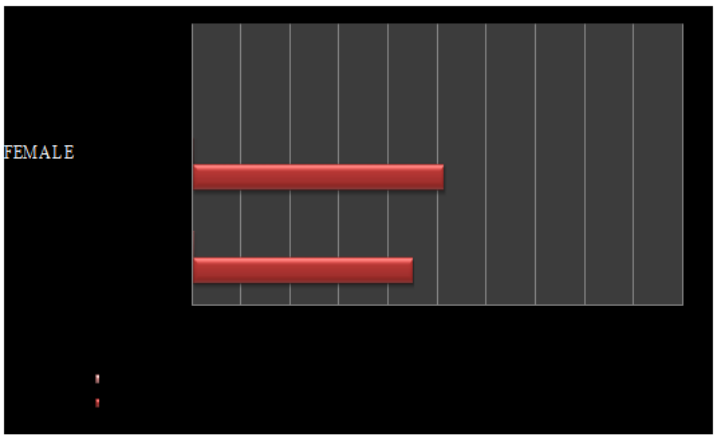


Figure4. Showspercentageofparticipantsbygender

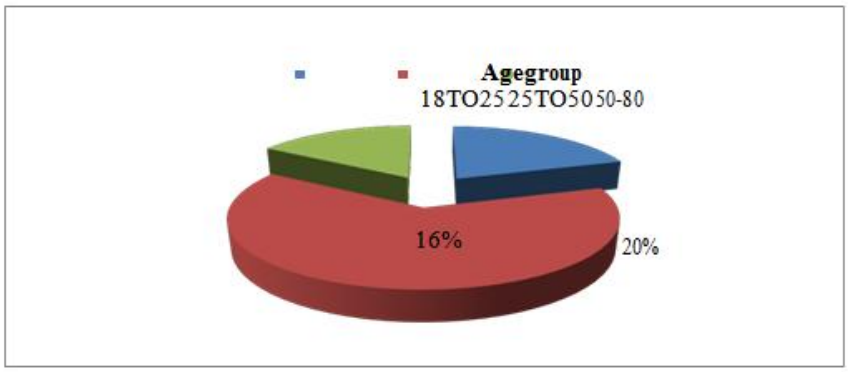


Figure 5. Shows Percentage Of Participants By Ag

III. DISCUSSION

The Discussionsection Focuses On The Results Of The Three Objectives Of This Studywhich Assessedifcliniciansweerequestingforrenalcreatinineclearancetestsinhiv/Aidspatients On Tenofovirbasedregimenat2 Weeks (Baseline)Beforeinitiationoftreatment,Thenat 3 Months Andat6months Posttreatment.

Thisstudyreviewed322HIV/Aidspatientswhowereontenofovirbasedregimenatlevy Mwanawasageneral Hospital Inlusaka.

IV. CREATININE RESULTSAT BASELINE(2 WEEKSPRE-TREAMENT)

TheresultofthisstudyShowsthatcliniciansrequestedforrenalcreatininetestsonthepatientatweeksbeforeinitiatingtreatment.Inthisstudy92.5%OfthepatientshadTheirrenalcreatinineTestdonebeforetheycouldcommencetreatmentonatenofovirbasedregimen.Thesefindings Arein Conformitywith Zambianhiv Consolidated Guidelines (2014)AndAlsothewhohivTreatmentprotocolsontenofovir,Whichrecommendsthatrenalcreatininetest,Shouldbeapre- Requisite Before A Patient Can Commence Treatment On Tenofovir. This Reflectsa Moderate Adherenceby Healthcareprovidersonthetreatmentprotocols,However,7.5%Ofthepatientsdid Not Have Their Creatinine Results In The Files, Therefore This Meant That These Patients Had Commenced Treatment On Tenofovirwithout Renal Monitoring Hence Risking The Patients Qualityof Life.Thebaselinerenalmonitoring IsofgreatsignificanceasitdeterminesthechoiceofthetreatmentDependingOnthecreatinineresults,Thusacompleteadherencetotreatmentprotocolsisrequired.Lackofadherencetotreatmentguidelinescouldresultindevelopmentofrenalinjuries,ThisisEvidencedbyastudywhichwasdoneinzambiaatthecentreforinfectiousDiseasecontrolby (Chabala,2015)WhichaimedatdeterminingWhetherpatientsontreatmentwithtdfBasedRegimendevelopRenaldysfunctionatoneYearoftherapycomparedtothoseonNonTDFBasedregimen,Thestudyconcludedthatadultswithhiv/AIDSOnTreatmentwithtdf-BasedRegimenwere8.7timesmorelikelytodevelopRenaldysfunctionafteroneyearoftherapy From Havingnorenaldysfunctionatbeginningoftherapycomparedtothoseonnon-TDF-Based Regimen. A Number Ofchallengescouldhaveaffectedthe Findingsof Thisstudy,These Rangesfromlimited Resources, Lack Ofcreatinine Reagents, Lack Of Manpower Etc.

V. CREATININE RESULTSAT 3 MONTHSPOST TREATMENT

InthisstudyWeprovideevidencethatcliniciansrequestedforrenalcreatinineclearancetestsOnpatientsafter 3monthsofcommencingtreatment. Wefoundthat 68% Of Patients Had Their Renal Creatinine Results Done 3 MonthsAfterTheyHadCommencedTreatmentOnTenofovir,Thisshowedadeclineinthelevelofadherencetotreatmentprotocolsascompared To92.5% Adherencerecordedatbaseline.Inthisstudy32%Ofthepatientsdidnothaverenal Creatinine Resultsin Their Files, This Entails That Patients Continued Receiving Medication WithoutareviewoftheirrenalPerformanceAfterexposuretoTenofoviAreductionintheadherenceofrenalcreatininemonitoringcanresultinemergencyOfNephrotoxicitieswhichcouldCulminateInHighMortalityRates,Similarfindings AreEvidencedInStudieswhichweredoneby(Hall,2012),(Isabelle,2013),(Horberg,2010) And(Nelsona,2007), WhichconsensuallyConcludedthattenofovirusedecreasesrenalPerformance,ThuswhorecommendsaCompleteadherencetotreatmenttocols.Thereductionintheadherencetoprotocolsbyhealthcareproviderscouldbeattributedby The Limitedof Resources In Most Health Facilities Such As Creatinine Reagents, Lack Of Manpower Amongotherchallenges.

VI. CREATININE RESULTSAT 6 MONTHSPOST TREATMENT

Ourresultsindicatethatcliniciansrequestedforrenalcreatininetestsonpatientsafter6monthsftreatment.Wefoundthat82%Ofthepatientshadtheircreatinetestdoneafter6 Monthsofbeingontreatment,Thisshowedaslightincreaseinthelevelsofadherenceby Health Careproviders As Compared To 68%Which Was Scored At 3 Months. Despitethe Increaseinthelevelsofadherence6monthsaftercommencing Treatment, About 18% Of Thesepatientsdidnothavetheircreatinineresultsintheirtreatmentfiles,Thismeansthat Thepatientswerebeinggivenmedicationwithoutacloserenalmonitoring,AsSuch,ThisPosedagreaterriskonthesepatientsofdevelopingrenalinjuryduetothenephrotoxicityThatiscausedbytenofovir,ThefindingsofthisstudyAreinlinewithotherstudieswhichwereDoneby(Horberg2010;Holtetal,2014;Pateletal,2010)WhichemphasizeontheneedtoMonitorRenalCreatinineclearanceregularly,EspeciallytoPatientsOnTenofovirInordertoeffectivelyManagethesepatientsontenofovirbasedregimen,Arobustsystemofonitoringrenalperformanceshouldbeputin PlaceAndcliniciansshouldAdheretoit,ThisCan Helpmitigatetheoccurrenceofrenalinjuriesresulting Fromtenofoviruse.Apartfrom Clinicians, Pharmacistsalso Should Play An Active Role In Ensuring That Drugs Are Not Dispensed Withoutavailabilityof Creatinineresultsespeciallyifthepatient Is Due Forlaboratory Check Up.Thefluctuationsinthelevelsofadherenceby Healthcareprovidersmaybeduetoa freasonsthatrangefromlimitedresources,Inadequatecreatininereagents,Lackof ManPowerandmanyMore.AnyImprovementonthesechallengeswillhelpinelevatingtheAdherencelevels,Thisultimatelyhelpimprovethequalityoflifeforthepatient,Including Early Diagnosisofrenal Injuryand Reduction Inmortalityresultingfrom Renal Toxicity.

VII. CONCLUSION

Inthisstudy92.5%(298/322)Ofpatientshadtheircreatininetestdone2weeks(Baseline)Beforetheyommenced theirtreatmentonatenofovirbasedregimen,While7.5%Ofpatients Did Nothave Creatinine Results On Their Files, Considering The Nephrotoxic Nature Of Tenofovir, It Was Risky For The 7.5% Patients Who Started TreatmentWithoutcreatinineResultsInTheirFiles.Inthisstudy68.3%(219/322)Ofpatientshadtheircreatininetestdone3monthsafterthey Had Initiated Treatment Onatenofovir Based Regimen, While 32%Of Thepatientshadno CreatinineresultsOfTheirfiles.ThiswasquietlowasmostpatientscontinuedTakingmedicationWithoutmonitoringtheirrenalPerformance,ThisWasUnsafeforthePatients.Thefollowupat6monthsposttreatmentshowedThat82%(264/322)Ofpatientshadcreatinineesultsintheirfiles,However18%Ofpatientsdidnothavecreatinineresultsintheirfiles,ThisalsoposedariskyTopatientsbecausetherenalperformancewasnotknowndespitethemTakinganephrotoxicDrug.Althoughthestudywasasuccess,Andtheinstitutionwherethisstudywasbeingcarriedout Wascommittedtoprovidingqualitypatientcareinthemidstoflimitedresources,ManpowerAndotherchallenges,Theimportanceofrenalcreatinineclearance monitoringInpatientsonTenofovir Basedregimenshould Be Emphasized.

VIII. RECOMMENDATIONS

1) We Recommend That Similarstudiesshouldbecarriedoutatalargescalesoasto Bringout On A National Scale So As To Bringout A Truepictureof Themanychallenges And Lacunasfaced In The Implementations Of Treatmentprotocols.
2) Thereisneedforthegovernmenttoemploymorespecializedstaffsandtrainthemin Key Areas Of Need So As Toscale Up In The Provisionofqualitypatientcare.
3) Thereisneedtoprocuremorelaboratory Equipmentsandalsotrainmorestaffinart Management.
4) Need Toemploymore Medical Records Clerks So As To Improveon Patient Record Keeping

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