# NEURO- PSYCHIATRIC COMPLICATION OF HIV/AIDS IN ROYAL NEPALESE ARMY

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## INTRODUCTION:

Acquired Immune Deficiency Syndrome (AIDS) is a deadly disease caused by Human Immune Deficiency Virus & was detected first in us in 1981 (C D S). Human retrovirus was first isolated by a French Team led by Dr. Luc Montagnior & an American Dr. Robert Gallo in 1984 which is equivalent to death sentence. 22.6 million people world wide is thought to be infected by HIV.

| | | |
|---|---|---|
| MEN | - | 12.6 Million |
| WOMEN | - | 9.2 million & |
| CHILDREN | - | 830,000 |

Millions more will be added in the near future. The HIV is infecting 8,500 new victims, including 1,000 children everyday. Death toll by AIDS is thought to be six million after the emergence of the Human Immune Deficiency Virus in the world.

WHO estimates that there will be approximately 40 million HIV infected men, women & children with 90% of the cases in the developing countries. So the land lock cursed undeveloped country Nepal which is located in between China & India is no exception from the epidemic of HIV/AIDS.

As per current report of national center for AIDS & STD Control (NCASC 1997) Kathmandu, out of 21 million Nepalese population, 826 people are suffering from HIV/AIDS infection, 512 males, 314 females. WHO estimates that 30,00 cases are infected by HIV in Nepal. It may increase to 1,00,000. HIV infected person by the year 2000 if the AIDS preventive & control program is not being lunched effectively reported by WHO.

Military community is a close society, totally deprived of social & family life, lease paid salary, not sufficient to meet the basic family need, exposure to highly risky area during training period, migration of unit. It can not be excluded the negative impact of Neuro-psychiatric, physical, social, cultural, financial to the affected community by HIV/AIDS.

Neuro-psychological impairment & acute psychiatric symptoms are the first manifestation of HIV/AIDS due to early penetration of HIV into the brain with the help of macrophages crossing the blood brain barrier & involving the subcortical white matter (Levy et al 1988, Petry 1986). Early appearance of neuro-psychiatric symptoms masking the physical symptoms which under rate the possible physical causes of mental symptoms.

HIV/AIDS is one of the deaden cerebral infection of human retrovirus showing the mental disorder like: anxiety, depression, psychosis & cognitive dysfunction like: dementia, forgetfulness, slowing of thought psycho-motor disorder & behavioral problem (Benson 1987). Neuro-psychiatric symptoms dominates the physical symptoms which will be sparse and appears lately which is substantiated due to secondary opportunistic infection by the organism. Those symptoms occur in variable combination mimicking acute or chronic Organic Mental Disorder (Lun et al 1991, Navia et al 1986). Few patients were studied for the Neuro-psychiatric and psychosocial HIV/AIDS related problem in R.N.A.

**OBJECTIVE:**

The main objective of this study is to understand the magnitude of the Neuro-psychiatric and psychosocial problems of HIV/AIDS in R.N.A.

**MATERIALS:**

The confirmed hospital admitted cases of HIV/AIDS, with the help of ELISA, Western Blot test and DSM IV criteria were taken for the study.

**METHODS:**

1. D.S.M. IV Criteria.
2. Socio-Demography Proforma.
3. Clinical Symptoms Check List & Rating Scale.
4. Knowledge, Attitude, Behavioral Evaluation Proforma.
5. Folstein Mini Mental State Examination Form.
6. Max-Hamilton's Anxiety & Depression Rating Scale.
7. M.R.I. Brain.
8. Elisa & Western Blot Test.
9. Laboratory Investigation.

Initially, the specially self designed socio-demography proforma data sheet was administered to all the patients for the detail demographic study. A symptom check list rating scale was applied for all the patients to evaluate cerebral dysfunction, neuro-psychiatric manifestation and physical symptoms. Knowledge, attitude & behavioral evaluation proforma was given to all the patients to know the knowledge, attitude & behaviour towards the illness. Folstein Mini Mental state examination was used for assessing the cognitive and the motor functioning. Max-Hamilton's anxiety and depression rating scale was submitted to all the cases to assess the associated anxiety and depressive features among the affected victims. MRI Brain was being done for all the victims routinely to find out cerebral lesions during HIV/AIDS infection of the brain. Subsequently Elisa and Western Blot test were done for all the patients with all aseptic precaution to confirm the diagnosis. Blood samples were drawn from all the cases to evaluate the VDRL, ESR & Hemoglobin routine Tuberculin test was done to find out opportunistic infection of Tuberculosis.

**RESULTS:**

**TABLE NO. 1:**

DEMOGRAPHIC CHARACTERISTICS

| AGE DISTRIBUTION | NO. | % |
|---|---|---|
| 14-19 yrs | 1 | 16.66 |
| 20-29 yrs | 5 | 83.33 |
| TOTAL | 6 | 100 |

Regarding the distribution & demographic characteristics (Table No. 1), this study revealed that the age of the patients were ranging from 14-29 years. Most of the victims were of young age groups less than 34 years.

**TABLE NO. 2:**

SEX DISTRIBUTION

| SEX | NO. | % |
|---|---|---|
| MALE | 5 | 83.33 |
| FEMALE | 1 | 16.66 |
| TOTAL | 6 | 100 |

The analysis of this study indicated that male victims 5 (83.33%), preponderance than female 1 (16.66%), who was a house-wife. The male individuals were more at the risk group in comparison to female in the military community. Sexual mode of transmission of HIV is more common among army personal i.e. male to male & female, female to male rather than I.D.U. & transfusion.

**TABLE NO. 3:**
SOCIO-ECONOMICAL STATUS

| S.E.S. | NO. | % |
|---|---|---|
| UPPER | 0 | 0 |
| MIDDLE | 0 | 0 |
| LOWER | 6 | 100 |
| TOTAL | 6 | 100 |

This analysis of the data showed that all the victims 6 (100) were from low socio-economical status because of poverty & less salary, housewife from poor family is no exception to get exploited from faithfulness so as to support the financial deficit.

**TABLE NO. 4:**
JOB & STATUS

| NATURE OF JOB | NO. | % |
|---|---|---|
| EMPLOYED | 5 | 83.33 |
| UNEMPLOYED | 1 | 16.66 |
| TOTAL | 6 | 100 |

Most of the male employed 5 (83.33%) were exposed to HIV in contrast to unemployed housewife 1 (16.66%). Both of them were exposed to HIV as they were from similar professional hazard. Long separation from families, migration & exposure to endemic area perpetuate to welcome unwanted infection of HIV.

**TABLE NO. 5:**

CASTE & HIV/AIDS

| TYPES OF CASTE | NO. | % |
|---|---|---|
| NON-BRAHMIN | 6 | 100 |
| BRAHMIN | 0 | 0 |
| TOTAL | 6 | 100 |

All the Non-Brahmin groups 6 (100%) were vulnerable to HIV infection in comparison to Brahmin groups because they seek to be more orthodoxic & strictly follow the Hindu philosophy of monogamous marriage in which less chance to the exposure of infection.

**TABLE NO. 6**
DURATION OF ILLNESS

| DURATIONIN YEARS | NO. | % |
|---|---|---|
| 0-6 MONTHS | 2 | 33.33 |
| 2-5 YEARS | 4 | 66.66 |
| TOTAL | 6 | 100 |

This data revealed that the onset of the symptoms & diagnosis was variable, earliest case detection less than 6 months was 2 (33.33%), maximum cases 4 (66.66) were detected after 5 years of duration of illness. Those cases were detected accidentally during psychiatric, medical management & pre-operative check-up. Delayed diagnosis of the case was may be due to the unpredictable symptoms & symptoms appearance, social stigma, lack of health awareness & investigatory tools, material & legal complication.

## TABLE NO. 7:
## NEURO-PSYCHIATRIC MANIFESTATION & HIV/AIDS

| | | NO. | % |
|---|---|---|---|
| 1. | CLINICAL SYMPTOMS | | |
| | CEREBRAL DYSFUNCTION | | |
| | FEVER | 2 | 33.33 |
| | MENTAL DETERIORATION | 1 | 16.66 |
| | STUPER | 1 | 16.66 |
| 2 | PSYCHIATRIC | | |
| | ANXIETY | 6 | 100 |
| | DEPRESSION | 6 | 100 |
| | PROMISCOUS | 2 | 33.33 |
| 3 | PHYSICAL | | |
| | PENILE WART | 1 | 16.66 |
| | VERICOCELE (Lt.) | 1 | 16.66 |

Regarding Neuro-psychiatric manifestation (1) In Cerebral Dysfunction 2 (33.33%) patients had fever characterised by mild with evening rise of temperature (2) In Mental Deterioration 1 (16.66%) had mental deterioration suggestion attention & concentration impairment slowing or thought & recent memory deficit. (3) In Stupor case 1 (16.66%) had stupor, confused & disorientated. (4) In 6 cases (100%) had Anxiety & depression. (5) Where as 2 cases (33.33%) had promiscuous behaviour. (6) 2 cases (33.33%) had reported physical problems of penile wart & vericocele respectively.

## TABLE NO. 8:
## KNOWLEDGE, ATTITUDE & BEHAVIOR (KAB PROFORMA)

| ITEMS | RESPONSE | NO. | % |
|---|---|---|---|
| KNOWLEDGE | POOR | 6 | 100 |
| ATTITUDE | NEGATIVE | 6 | 100 |
| BEHAVIOR | PROMISCUOUM | 2 | 33.33 |

This analysis revealed that all the 6 (100%) patients had poor knowledge, significance misconception & negative attitude & 2 (33.33%) cases had adnormal promiscuous sexual behavior.

## TABLE No. 9
## FOLSTEIN MINI MENTAL STATE EXAMINATION

| | PATIENTS | SCORE | % |
|---|---|---|---|
| 1 | FEVER WITH STOPER | 10 | 33.33 |
| 2 | LT VERICOCELS | 22 | 73.33 |
| 3 | FEVER | 21 | 70.00 |
| 4 | ANXIETY WITH DEPRESSION | 22 | 73.33 |
| 5 | ANSIETY & DEPRESSION | 20 | 66.67 |
| 6 | PENILE WART | 20 | 66.67 |

Cognitive function measure by Mini Mental State Examination rating scale revealed that only 1 case (16.66%) score 10(33.3350 below normal value. Her cognitive function was impaired indicating disorientated, recent memory & visuospatial deficit. The rest of the 5 cases(88.33%) scored normal range but they had significance impairment visual motor integrity. This type of Cognitive impairment is well established due to direct consequence of HIV infection of C.N.S. (Lun et al 1991).

**TABLE No. 10**

MAX-HAMILTON'S ANXIETY & DEPRESSION RATING SCALE

All the six victims showed Anxiety with Depression but one female case (33.33%) had shown severe Anxiety with Depression features.

**TABLE No. 11**

M.R.I.BRAIN

| | VICTIMS | NO | RESULT |
|---|---|---|---|
| 1 | FEVER WITH STOPER | 1 | CEREBRAL DEMYLINATION & OEDEMA |
| 2 | LT. VERICOCELE | 1 | N.A.D. |
| 3 | FEVER | 1 | N.A.D. |
| 4 | ANXIETY WITH DEPRESSION | 1 | N.A.D. |
| 5 | ANXIETY & DEPRESSION | | N.A.D. |
| | PENILE WART | | N.A.D. |

M.R.I. finding in HIV/AIDS study revealed that only one case (13.33%) showed sub-cortical demylination, Cerebral oedema & astrocytic lesions. The rest the 5 cases (83.33%) had normal M.R.I. findings.

**TABLE No. 12**

LABORATORY EXAMINATION

| INVESTIGATION | NO. | RESULTS |
|---|---|---|
| ELISA TEST | 6 | +ve |
| WESTERN BLOT | 6 | +ve |
| VDRL TEST | 6 | -ve |
| ESR | 2 | RAISED |
| TUBERCULIN TEST | 6 | -ve |
| HEMOGLOBIN | 1 | LOW |

Laboratory investigation revealed that all the 6 cases (100%) had positive Elisa & Western Blot test, negative VDRL & Tuberculin test where as 2 cases (33.33%) had raised ESR & 1 case (13.33%) had low hemoglobin value.

## DISCUSSION:

HIV/AIDS is one of the most unwelcome socially stigmatize serious public health problems, burden to family community in the world & undeveloped country Nepal is not an exception. It is rapidly spreading with full swing among the ignorant young generation which is awfully & ironically neglected.

This is the young man disease. Predominantly young soldiers (83.33%) with long family deprivation commonly shows, promiscuous abnormal sexual behavior like homosexual, bisexual, multi-sexuality & preferring unsafe sex. They are mostly ignorant their risk to HIV, patronize the sex workers & invariably welcomes the HIV infection.

Migration of soldiers from one unit to another during training & job allocation they will be exposed to endemic area. They will be source of infection to their family when they visit home during festival & holiday. Some of the family who accompany with the husband or left behind, indulge sex sell to meet the financial need. Vulnerability of HIV infection & "Sex Work" of the soldier's family is determined by the poverty, inadequate salary of the husband, especially women needs income to support their family.

Poverty, professional hazard, ignorance & low status of the families perpetuate the individual for "Sex Sell" & exposure to HIV despite of faithfulness for partners, monogamous Hindu philosophy of family system in contrast to western society. Military vehicle drivers perceive themselves the king of the road usually visit sex workers at the stops along the major highways & at the final destination while away from home. They will potential source for contracting & spreading HIV to healthy people (Jell Hannum et al 1997). Religion, culture, social value, Hindu philosophy determines the vulnerability to HIV risk in the Nepalese Society. Orthodoxic Hindu belives virginity, faithfulness to partners, monogamous system. They have a faith that it is sinful act to have premarital, extramarital, multi-sexual &'sex sell behaviour in the society. " He who breaks the monogamous, faithfulness marital life he reaches to dark hell after death". Feat of religions, cultural & social value have protected the orthodoxic Hindu groups from HIV exposure in contrast to western groups. None of the Brahmin group(100% is having HIV problem in the sample which differs from the western findings of increase case load among black community. The prevalence of HIV/AIDS is least in Nepal mainly because they have faith that "Not only the abnormal sexual act but even to talk about sex in front of others is sinful act".

In this study HIV transmission among Military personal is noted primarily through sexual mode in contrast to western developed country the mode of transmission is through transfusion, I.D.U. & homosexual (Jagdish or et at 1994).

In this study cases were diagnosed after 6 months (33.33%) to 5 years of onset lack of health awareness, not getting investigatory tools which delayed the early diagnosis where as strong social stigma, price value of investigatory tools & costly management complicated & sustained the HIV/AIDS.

All the six cases (100%) were identified during routine investigation at the time of Neuro-psychiatric, medical management & pre-operative checkup.

Regarding clinical symptoms profile indicated that all six case had predominant Neuro-phychiatric symptoms like anxiety, depression, promiscuous sexual behavior, one case (16.66%) had impired cerebral function i.e. memory deficit, altered sensorism, stupor, two cases (33.33%) reported to hospital with physical problem for penile wart (16.66%), left vericocele (16.66%). Early mainfestation of Neuro-psychiatric symptoms, abnormal sexual behavior, migrant soldiers from endemic area should be considered HIV/AIDS high risk group.

Findings of cognitive deficit in M.M.S.E. evaluation showing impairment of attention & concentration, recent memory impairment, viuospatial deficit, showing of thought indicated the early involvement of C.N.S. by Human Retrovirus with predominant neuro-psychiatric symptoms & absence of significance physical symptoms thought to be due to late involvement of opportunistic infection which agree with the finding of Berger 1987, Wilkie 1990.

KABP protocol revealed that all the cases had poor knowledge of illness, negative attitude towards disease, abnormal sexual behavior demanding mental health awareness. MRI Brain of a patient revealing cerebral oedema with sub-cortical white matter deymyelinating changes correlates with the cognitive deficit that supports for the diagnosis (R.T. Johnson 1982).

All the cases showed positive Elisa & Western Bolt test but rest of the laboratory investigatory reports was not supportive. Routine serological screening test for early identification of cases is mandatory for higher risk groups.

Standard management plan for HIV/AIDS with multidimensional approach is need felt which is yet debatable when there is alarming rapid spread of HIV/AIDS in Asian countries as in Nepal.

***CONCLUSION:***

1. PROBLEM:-
   - Unwelcome & Social Stigma
   - Public Health Problems
   - Burden For Undeveloped Country

2. NEGLIGENCE:-
   - Young Man Disease
   - Rapidly Spreading
   - Preventable
   - Ironically Neglected

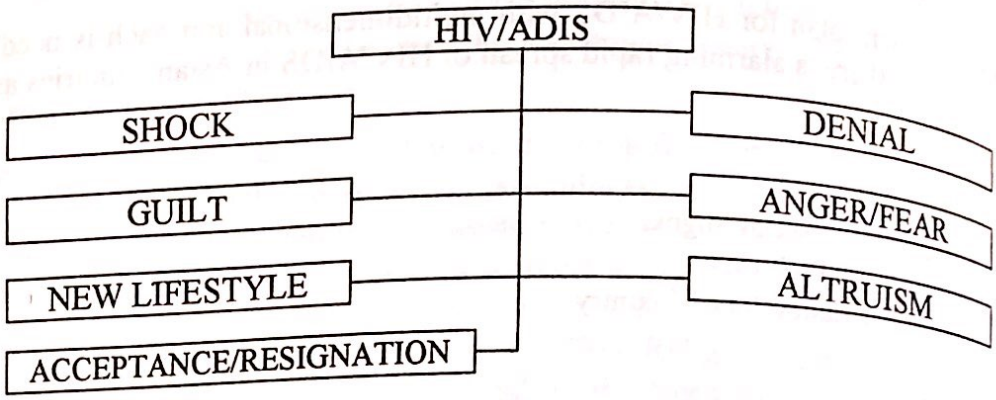
3. PROFESSIIONAL HAZARD:-
   - Abnormal Sexual Behavior
   - Homosexual, Bisexual, Multi-sexual Partner
   - Seek of New Partner on Long Family Separation
   - Promiscuous, Unsafe Sexual Behaviour
   - Poverty
   - Sex Sale for Money
   - Migration of Unit & Exposure To Endemic Area

4. DIAGNOSTIC PROBLEM:-
   - Variable Onset Of Illness
   - Unpredictable Medical & Neuro-Psychiatric Symptoms
   - Social Stigma, Stict Army Rules & Regulations
   - Lack Of Health Awareness
   - No Basic Investigatory Tools & Treatment

5. CLINCHING HIV/AIDS DIAGNOSIS:-
   - Early Appearance Of Neuro-Psychiatric Symptoms
   - Mental Deterioration
   - Abnormal Sexual Behavior
   - Drug Abuse
   - Endemic Area
   - Elisa & Western Blot Test

6. INVESTIGATION:-
   - Positive Elisa & Western Blot Test
   - Sub-Cortical Demyelinating Changes
   - Cortical Atrophy
   - Cerebral Oedimatous Changes
   - Scatter Hypodense Area
   - Ventricular Dilatation
   - Increased E.S.R.
   - Tuberculin Test
   - Anemia

# GOLDMEIER'S ADJUSTMENT REACTION STAGES




**SUGGESTIONS:**

1. Multidisciplinary Community Oriented Neuro & Mental Health Program
   - Preventive
   - Promotive
   - Curative
2. Neuro-Psychiatric Management
   I. Psychopharmacotherapy
   II. Psychotherapy
   III. Education Of Infection & Risk Reduction
   IV. Enhancement Of Belief In Self Control
   V. Training To Identify & Rationally Correct Dysfunction
   VI. Tain To Challenge Problem
3. Psycho-Social Support
   - Maximize Residual Function
   - Empathize
   - Help For Problem Solving
4. Psycho-Education
   - Modes Of Viral Transmission
   - HIV Risks
   - Behavioral Risks
   - Control Over Own Destiny
   - Meaning & Limitation Of HIV Test
5. Behavioral Modification
   - Goal Directed For Risk Reduction Behavior
6. Development Of:
   - Educational
   - Training
   - Counseling
   - Research
   - Referral Center
7. Development Of Self Help Group
8. Exploration Of Better Medical Psycho-Social Management Approach
9. Serial Sequence Of Serological Test For Migrant Soldiers From Endemic Area
10. Multi-Dimensional, Early Identification Approach:
    - Neuro-Psychiatric Evaluation
    - Elisa Test
    - Western Blot Test
    - Routine Blood Exam