

A Case of Spinal Cord Injury with HIV, Hepatitis-B Infection: Ethical & Rehabilitation Issues

Dr. M Nallegowda MBBS, MD(PMR) DNB, Junior Resident, **Dr. S Wadhwa**, MBBS, DPMR, DNB(PMR) Additional Professor, **Dr. Pallab Das**, MBBS, Junior Resident, **Dr. U. Singh**, MBBS, DPMR, DNB(PMR) Professor & Head, Deptt. of PMR, AIIMS, New Delhi29

Abstract

Spinal cord injury associated with HIV and hepatitis-B infections is unusual. These two infections adversely affect the functional outcome of already disabled person. Exercises increase the lean body mass, muscle strength and CD4 count. We present the case of a girl with spinal cord injury, who also developed HIV and Hepatitis-B infections through blood transfusion. We discuss the ethical and rehabilitation aspects.

Key Words: Spinal Cord Injury, Ethics, Disability, Rehabilitation, Exercises, HIV, Hepatitis-B.

Introduction

In spite of the Law for mandatory blood screening in India, incidence of HIV and Hepatitis-B due to blood transfusion is increasing. According to National AIDS Control Organization (NACO), there were 3.86 million persons sero positive for HIV at the end of year 2000. That is highest in the world. Out of 20,304 AIDS cases, 805 (4.16%) are reportedly due to blood or blood products. Exercises have a great role in endurance building and improving quality of life in these patients. AIDS with Spinal cord injury has been previously reported in a homosexual man¹. We report a spinal cord injury case infected with HIV and Hepatitis-B infection due to blood transfusion. To our knowledge this is the first case report of this kind from India.

Case Report

A 14-year-old Indian girl, resident of UP came with complaint of weakness in both lower limbs and inability to control urine and stool for 2 1/2 months. There was a history of trauma to spine

by sliding of mud over her body near her village. She was brought to a private hospital where MRI of spine was done. MRI revealed fracture L1. She was initially managed by non-surgical methods for a week. Later she was referred to other hospital for spinal fixation. Spinal fixation was done after 10 days of injury and she received 2 units of blood, which was brought from a private blood bank. After 3 weeks she was discharged from the hospital. 1 ½ month after surgery there was no change in neurological status. Her parents brought her to AIIMS for further treatment. She was admitted in PMR ward. On examination she was found to have complete paraplegia with motor & sensory level of L1 with ASIA-Class A. She had a grade 4 pressure sore in sacral region and she was on indwelling catheter for neurogenic bladder. Functional Independence Measure (FIM) score was-46. Initial routine investigations were normal except ESR 45/1st hour.

She was on rehabilitation programme including upper limbs strengthening exercises; Tilt table standing and wheelchair transfers. She learned bladder training with clean self-intermittent catheterization (CSIC). After 1 month of admission she developed abdominal discomfort,

Address for correspondence: Dr M. Nallegowda, Department of PMR, AIIMS, New Delhi 110029, email: drmallik@yahoo.com

vomiting and fever. Urine culture sensitivity was done and reported E-coli >10⁵/ml and sensitivity to ciprofloxacin, which was given for complete course. She was treated with the same for fever and UTI. In the 2nd month of admission she developed a mild icterus, urine was positive for bile pigments & salts. LFT were repeated next day, which came Total Bilirubin-3mg%, SGOT-673 IU, SGPT- 681 IU, and ALP-590 IU. In spite of antibiotic therapy and bed rest her fever persisted. After 5 days repeat liver function tests were repeated total bilirubin 4.4mg%, SGOT-1155 IU, SGPT-824 IU, ALP-406 IU. Further investigations revealed she was positive to HbsAg and HIV. CD4 count was 1979 cells/microlitre.

Her LFT came to normal after 8 weeks, during this period she was on bed rest. Rehabilitation program was started with upper limb strengthening exercises with pushups and dumbbells. She continued clean self-intermittent catheterization. She was able to walk with B/L axillary crutches and B/L HKAFO. Her pressure sore in sacral region healed completely. She was counseled for future marriage & sexual life and advised on how to take precautions in day-to-day activities to prevent the spread of infection. Because of her normal CD4 count we didn't start any antiretroviral therapy. She was discharged at the end of five months in the hospital. At the time of discharge her LFT was SGOT-39IU, SGPT-37IU, alkaline phosphatase-114IU and FIM score was 113, in comparison of 46 at the time of admission.

Discussion

Spinal cord injury associated with HIV, Hepatitis-B infection was first reported by Meythaler JM et al in 1988¹. In his report a homosexual man who developed quadriplegia due to injury by a small caliber pistol. The common presentation in this patient and our patient is fever of unknown origin.

According to 1993 revised CDC classification system it is difficult to classify spinal cord injury patient for staging of HIV. Infection with HIV causes progressive ultimately fatal illness characterized by depletion of CD4 count, muscle wasting, fatigue and depression. Spinal cord injured patient have already got disability, associated HIV infection in the same patient causes additional disability by decreasing muscle power, which interferes in the ADL. At the time of first medical contact, 9% of HIV infected individuals and 22% of AIDS patients require assistance in ADLs. Child may be isolated due to barriers from the caregivers, therapists, and hospital staff due to incontinence or fear regarding the disease. Misconceptions regarding the disease in school also makes child isolated and give a blow to the education. Stress due to traumatic injury and additional stress due to disease retard the growth of child. The disease also isolates the parents/dependents socially, psychologically and economically. In this case patient was allowed to share a common ward with other patients and advising her to take necessary precautions to prevent the spread of infection.

La Perriere et al reported increase in CD4 count following aerobic exercise training with asymptomatic HIV-1 males, whose CD4 count is in normal range². Lox et al reported moderate intensity aerobic exercises have been shown to significantly increase CD4 cell counts among asymptomatic HIV infected individuals³. Muscle mass is a major determinant of strength and thus of functional capacity and disability. In HIV patients because of wasting of muscles there is loss of lean body mass. The only physiological intervention known to increase lean mass, muscle mass and strength is progressive resistance exercises. A study done by Ronenn et al suggests that progressive resistive training has the potential to increase strength and lean mass in-patients with HIV infection⁴.

The Supreme Court of India had banned paid blood donations by the end of 1997 and established the National Blood Transfusion Council to look for the safety of blood⁵. Still a high incidence of (8.2%) HIV was observed in blood donors. A study conducted by Pandav et al estimated the annual loss of economy due to HIV population in India to be 3447 billions⁶. In conclusion it is very essential to ensure safety of blood in treating a spinal injury patients.

In conclusion although patient required complete bed rest for few weeks we did not observe any progressive neurological deficit. Strict enforcement of laws concerning blood banks to prevent spread of infection is needed to prevent such cases in future. Rehabilitation programme and community participation helps to overcome physical and mental illness due to the disease. Progressive resistive exercises, aerobic exercises, energy conserving ADL modifications, psychological and sexual counseling along with drugs can add life to years and also years to life of HIV patients.

References

1. Meythaler JM, Cross LL: Traumatic spinal cord injury complicated by AIDS related complex. *Arch Phy Med Rehabil* 1988; 69: 19-222.
2. La Perriere, A.R, M. Fletcher, G. Ironson, et al: Aerobic exercise training in an AIDS risk group. *Int.J.Sports.Med.* 1991; 12: 551-557.
3. Lox C.L, Tucker: Exercise as an intervention for enhancing subjective Well being in an HIV-1 population. *J Sports Exerc. Psycholo.*1995; 17: 345-362.
4. Ronenn R, Ann Mc Dermott, Rina B et al: Short-term progressive resistance training increases strength and lean body mass in adults infected with human immunodeficiency virus. *AIDS* 1999; 13: 231-239.
5. Ray VL, Chaudhary RK, Choudhury N: Transfusion safety in developing countries and the Indian scenario. *Dev Biol Stand* 2000; 102: 195-203.
6. Pandav CS, Anand K, Shamanna et al: Economic consequences of HIV/AIDS in India. *Natl Med J India* 1997 Jan-Feb; 10(1): 27-30.