

**RISKS TO MEDICAL & PARAMEDICAL STAFF  
CARING FOR UNSCREENED INFECTED PATIENTS**

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The W.H.O. calculated that in 1991, one hundred million people worldwide would be infected with the AIDS virus. It has been shown that since the first reported case of AIDS in 1981, the numbers have been increasing steadily over the past years. It also warns that failure to report cases, or under-reporting may make the problem look smaller than it actually is.

In 1987 W.H.O. reported seven cases of AIDS in Malta. These referred to cases which had developed the disease and not those infected with the HIV virus. Up to December 1991 the total number of cases of AIDS reported over the years had increased to a total of twenty-two. It is estimated that for every case of AIDS reported, there are 50 to 100 silent carriers living a normal life but in whom the disease may progress at any time. As in other countries, the disease is spreading steadily in the Maltese population. The non-medical population is becoming more aware of the situation. This increased awareness can be judged by the number of persons who demand screening for their practitioners. The patients are frightened, sometimes for well-founded reasons, that they may have acquired the virus through a chance encounter or through their husbands. Another reason for the increased awareness and concern is information snippets published in the local media giving facts and figures about the disease. The great majority of women with AIDS are in the reproductive age. The aim of this paper is to consider the dangers that medical and paramedical personnel run when dealing with a patient potentially infected with the HIV virus.

**RISKS OF TRANSMISSION**

It is now accepted that the risk groups for developing AIDS include drug abusers and homosexuals, besides the haemophilics who received infected blood products. These

individuals form the majority of AIDS patients at present and shall not be discussed further here since the health personnel would be alerted to the potential risk. The health worker is also at risk from the continuous exposure to potentially infected body fluids from individuals not suspected of harbouring the virus.

BLOOD is principally the main danger to health workers. However, HIV has been isolated not only from blood, but also from a wide variety of body fluids including saliva, tears, CSF, breast milk, amniotic fluid, urine, semen, and vaginal discharge. Three main mechanisms of infection are identified: (1) Inoculation of infected blood parenterally via needle puncture wounds and accidents at operations; (2) Blood contamination of non-intact skin e.g. via failure to use surgical gloves; and (3) splashing or spurting of infected blood on to mucous membranes.

The literature contains seventeen cases of HIV infection acquired by health workers. Twelve occurred from needles or cuts, two from infected blood coming into contact with damaged skin, two from exposure of mucous membranes, and one case from nursing an HIV infected child. A study on 1100 health workers who were exposed to blood or body fluids of AIDS infected patients, showed that 81% of these had parenteral exposure to blood, 10% had blood on damaged skin or mucous membranes, while 9% had exposure to other body fluids. Only three workers became seropositive giving an incidence of 0.3% six months after exposure. All these cases resulted from blood contamination. Similar statistics have been reported from different centres.

The position of doctors, nurses, and other health workers in the field of obstetrics and gynaecology is unique because of the increased frequency of contact with blood and body fluids in these wards and relative operating theatres. In these circumstances the health personnel are dealing with the unknown and has to consider each and every patient as potentially hazardous. Infection control guidelines should be applied to all and not limited to known cases of HIV infection.

## PREVENTING INFECTION

Although the health personnel can use appropriate barrier protection and the standard infection control techniques, one has to bear in mind that HIV infection can come from least suspected cases and common sense is therefore essential.

(1) GLOVES: Puncture of gloves will bring potentially infected blood in contact with wounds on hands and arms. In a recent study it was found that 48% of surgeons and 43% of scrub nurses have punctures in their gloves after surgical procedures. Most of these punctures are NOT recognised at the time of operation. The risk is therefore of prolonged contact of scratches of health workers with infected blood. The amount of blood in contact with wounds and the duration of this contact has direct importance in the development of HIV infection. Gloves should therefore be worn for touching or handling items or surfaces soiled with blood or body fluids and for performing injections and similar procedures, as well as handling soiled linen. Gloves should also be worn when dealing with laboratory specimens, stylets, alcohol swabs used for venepuncture, etc. In the operating room, double gloving should be encouraged. This will not prevent needle punctures but reduces the amount of blood that may come in contact with surgeon's and nurse's skin. Intra-uterine procedures are particularly of risk and gauntlet-type gloves should be worn for manual removal of placenta, artificial rupture of membranes and similar procedures.

(2) EYE SHIELDS: Those with poor sight requiring the wearing of glasses are fortunate, since these give undoubted protection to the possibility of potentially infected blood splashing onto mucous membranes. It is suggested that those who do not have sight glasses should invest in spectacle frames with simple glass to protect themselves during operative procedures. Some authorities have carried this even further by suggesting protective shields even by the sides of spectacles. Soon the surgeon will be working with blinkers and welders' masks.

(3) GOWNS: These should provide an adequate barrier to blood reaching skin. At present cotton or cloth scrub gowns are used. These are completely inadequate for this purpose because they are easily soaked through and allow

patients' body fluids to come in contact with the arms, abdomen, legs, etc of the health workers. The chest and abdomen could be protected with simple disposable plastic aprons, but of course this will not protect the arms. An alternative solution would be to use disposable impregnated gowns which are non-absorbent. These are especially useful when they have reinforced areas on the arms, chest and abdomen. It is time to think seriously of introducing these materials for gowns in theatres and the labour suite as the present gowns give no real protection in spite of the use of plastic aprons. The disadvantage is their cost and heat generation in long procedures. Similar protective drapes have to be considered for the patient.

(4) SHARP OPERATING INSTRUMENTS: The procedure of using a kidney-dish or similar receptacles in the hand-to-hand passing of sharp instruments during operative procedures needs to be enforced. This minimises the possibility of accidental injury to nurses, surgeons or assistants as instruments are being moved to and fro. The same procedure should be followed in venous and arterial punctures for blood investigations, epidurals, and similar procedures. Sturdy containers that take the sharps after use are available. The handling and disposal of these after use is also very important.

(5) OTHER MEASURES: Long plastic boots - the Wellington type - are essential in the work of obstetricians and gynaecologists. Obstetric procedures not unusually leave quite a pool of blood and amniotic fluid at the feet of the surgeon and his assistants. If one is not using impermeable shoes or boots, there will be prolonged contact of amniotic fluid in delivery rooms, blood at Caesarean sections, etc.

#### IN SUMMARY

Occupationally acquired HIV infection is not a common event - running in the region of 0.3 - 0.6%. This is probably due to the awareness that exists of the possibility of infection by health workers. Continuous vigilance and self-protection with adequate preventive measures are more than ever necessary because of the increasing incidence of the disease.