Eluding Transfusion - Transmitted HIV Infection : Report of Two Cases

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Abstract

Two hemophilia A boys (FVIII : C < 1% and 2.2%), whose ages were 12 and 14 years old, received fresh frozen plasma of 140 ml and 210 ml, respectively, in 1989. It was the 27th and 13th donation for each regular donor who was negative for anti-HIV testing. However, both donors had HIV seroconversion within 95 to 110 days after the last donation. They might have contracted HIV infection shortly after the last donation. Luckily, the two hemophiliac recipients are still in good health and negative for anti-HIV and HIV-antigen testings for 7 years.

The replacement of blood is life-saving, however, vice versa it is life- threatening too. Various transfusion-transmitted diseases are found such as hepatitis, human immunodeficiency virus (HIV), cytomegalovirus, etc. In order to avoid contracting transfusion-associated infections, screening for the markers of infectious agents are routinely performed in every unit of donated blood. Regarding the prevention of HIV transmission, anti-HIV testing was compulsory nationwide in 1989. HIV-antigen testing was added in 1991. Then the comprehensive donor interview and donor self - selection were included. After the interview, the donor is requested to fill a confidential questionnaire inquiring whether the donor was at risk for transfusion - transmitted diseases such as drug abuse, commercial sex workers and partners or homosexuality. The status of a safe donor should be ascertained by the donor himself before each donation.

This paper presented two hemophiliac patients, who escaped from transfusion - transmitted HIV infection, even though the donor had HIV seroconversion.

CASE REPORT

Two hemophilia A boys (FVIII:C < 1% and 2.2%) received fresh frozen plasma or cryoprecipitate transfusion in the case of bleeding episodes. Their ages were 12 and 14 years old, res-

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pectively. In 1989, each of them received fresh frozen plasma of 140 ml and 210 ml, respectively, from two regular donors who stayed in Bangkok. It was the 27th and 13th donation for each donor respectively. The anti-HIV testings (second generation ELISA) in both donors were negative. However, both donors had HIV seroconversion in the next regular donation which was confirmed by the Western blot assay (Diagnostic Pasteur, France). The interval between the last two donations for each donor was 95 and 110 days, respectively. The two hemophiliac recipients were closely observed and followed-up. The anti-HIV (second or third generation ELISA) and HIV-antigen (Coulter ELISA) were checked in intervals of six months to one year. They were in good health and required cryoprecipitate or fresh frozen plasma as replacement therapy regularly. The anti-HIV and HIV-antigen testings are still negative after 7 years of follow-up.

DISCUSSION

In Thailand, the blood components commonly used by the hemophiliac are not virus-inactivated. The virus-inactivated factor concentrates are too expensive for the patients to afford. Although the anti-HIV testing in the donated blood was initiated in 1987 and became compulsory nationwide in 1989, there have been 27 reported cases of HIV infection transmitted by anti-HIV seronegative blood in Thailand from 1988 to 1992[1]. Since one positive blood unit for HIV P24 antigen (confirmed by neutralization) was found in 3,400 to 10,000 anti-HIV seronegative blood units, [2,3] anti-HIV seronegative testing cannot totally prevent HIV transmission. With the addition of HIV-antigen testing, donor interviews and donor self-selection, the prevalence of transfusion-transmitted HIV infection has markedly decreased. Only two cases of HIV infection transmitted by blood, negative for anti-HIV and HIV-antigen, were reported in Thailand in 1993[4] and 1996,[5] respectively. Therefore, a small pool of lyophilized virus-inactivated cryoprecipitate might be the solution for the prevention of HIV and other infectious diseases. The heat treatment of 65-80°C for 24 to 72 hours will irradicate the infectious agents especially human immunodeficiency virus.

These two reported cases were extremely lucky. The donors had HIV seroconversion within 95 to 110 days after the last donation. They risked contracting HIV infection shortly after the last donation. The route of HIV transmission might be sexual relations with commercial sex workers who had a high prevalence of HIV infection. The regular donors who donated 13 to 27 times should be safer than new donors. The prevalence of infectious diseases among repeated donors was 4.8 per cent which was markedly lower than those of the new donors (9.12%)[6]. However, it was very sad to find these two regular donors having HIV seroconversion. The public campaign for safe sex with one's own spouse or partner should be emphasized and ascertained. Using condoms with commercial sex workers may not be the corrective solution.

In conclusion, the two hemophilia patients were reported to be extremely lucky to escape from transfusion-transmitted HIV infection even though the donors had HIV seroconversion after the last donation. Virus-inactivated blood products and public awareness of the hazards of HIV transmission will be the final solution for the prevention of transfusion - transmitted HIV infection.

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การรอดพ้นจากการติดเชื้อเอดส์จากการรับเลือด : รายงานผู้ป่วย 2 ราย

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ผู้ป่วยโรคฮีโมฟีเลีย เอ 2 ราย (ระดับแฟคเตอร์ VIII <1% และ 2.2%) อายุ 12 และ 14 ปี ได้รับพลาสมาสดแช่แข็ง (fresh frozen plasma) จำนวน 140 และ 120 มล. จากผู้บริจาคประจำ ซึ่งเป็นการบริจาคเลือดครั้งที่ 13 และ 27 ตามลำดับ ผู้บริจาคทั้ง 2 รายมีผลการตรวจ anti HIV เป็นผลลบในขณะที่มาบริจาค และได้กลับกลายเป็นผลบวกในเวลา 95 ถึง 110 วันต่อมา ผู้บริจาคเลือดทั้ง 2 รายคงได้รับเชื้อเอดส์หลังจากการบริจาคเลือดครั้งสุดท้าย นับเป็นโชคดีของผู้ป่วยโรคฮีโมฟีเลียทั้ง 2 รายที่รอดพ้นจากการติดเชื้อเอดส์จากการรับเลือด ขณะนี้ผู้ป่วยยังมีสุขภาพแข็งแรง และให้ผลการตรวจ anti HIV และ HIV antigen เป็นผลลบจากการติดตามเป็นเวลานาน 7 ปี

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