PENROSE INQUIRY

Topic C3: Additional Witness Statement from Dr Peter R Foster concerning new evidence that was introduced by Professor W van Aken at the oral hearing of the Inquiry held on the 4th November 2011.

I believe that the evidence given to the Inquiry on 4th November 2011 contained two substantive errors which mislead the Inquiry. As I am not scheduled to give further oral evidence, I wish to submit this written statement to clarify the matters in question to assist the Inquiry in its understanding of these important issues.

1. The First Substantive Error.

i) The first substantive error was the description of dry heat treatment by the Netherlands Red Cross (NRC) as 65°C for 72 hours, when it should have been 60°C for 72 hours.

ii) The error that the conditions were 65°C for 72 hours was stated by Professor van Aken on three occasions (transcript, page 10, line 8; page 41, line 1 & page 42, line 16). It was also repeated by Mr Mackenzie (page 45, line 11).

The Actual Situation

iii) The NRC dry heat treatment was at 60°C for 72 hours as reported in:

- a publication from the NRC (Tersmette et al. *Vox Sanguinis* 1986, **51**, 239-243)[1]
- a joint publication from clinicians and the NRC (Mauser-Bunschoten et al. *Vox Sanguinis* 1998, **74**, 225-227).[2]

iv) Professor van Aken acknowledged that the NRC method was obtained under licence from Baxter (transcript, page 42, lines 1-9).

v) it is well known that Baxter's Factor VIII concentrate was dry heat treated at 60°C for 72 hours (PR 7.81).

Conclusion

The NRC Factor VIII concentrate that was introduced in June 1985 was dry heat treated at 60°C for 72 hours, conditions which in my opinion were inferior to dry heating at 68°C for 24 hours which the SNBTS was using at this time.

2. The Second Substantive Error

i) Professor van Aken stated that "*We did not hear ever about an incidence of non-A non-B after we introduced the 65* (sic) *degrees at 72 hours product*" (transcript, page 42, lines 14-16).

The Actual Situation

ii) The transmission of hepatitis C by NRC Factor VIII concentrates was reported in a joint publication by clinicians and the NRC (Mauser-Bunschoten et al. *Journal of Medical Virology* 1995, **45**, 241-246).[3] In particular, figure 2 of this publication shows an increase in the % of haemophilia patients infected with hepatitis C who were treated with NRC concentrate after 1985.

iii) The equivalent Factor VIII concentrate manufactured by Baxter is well known to have continued to transmit non-A, non-B hepatitis (PR 7.81).

iv) The dry heat treated Factor VIII concentrate produced by the NRC would not have been expected to be safe from non-A, non-B transmission based on the experience of Baxter and other manufacturers.

Conclusion

v) The dry heat treat Factor VIII concentrate produced by the NRC from June 1985 was not free from transmission of non-A, non-B hepatitis (hepatitis C) as demonstrated in a joint publication by the NRC.

3. "*Professor, when did you have a Factor VIII product that was safe from transmission of NANB hepatitis?*" (Lord Penrose, transcript, page 40, lines 23-25)

It is my understanding that the chronology of NRC coagulation factor concentrates was:

Factor VIII Concentrates

- 1985-1988: intermediate-purity, dry-heat treated at 60°C for 72 hours (Baxter method).[2]
- 1988-1990: intermediate-purity, dry-heat treated at 60°C for 72 hours (method of Benny[4]).[2]
- 1990-1992: intermediate purity (method of Benny[4]), pasteurized at 60°C for 72 hours.[2,5]
- 1995 - : monoclonal-antibody purified, solvent-detergent treated.[2]

Factor IX Concentrates

- 1985-1992: dry-heat treated at 60°C for 72 hours.[2]
- 1992- : solvent-detergent treated.[2]

i) The NRC pasteurised Factor VIII concentrate was withdrawn in 1992, following an incidence of inhibitors to factor VIII in patients which was higher than expected.[5]

ii) The method of preparing the NRC solvent-detergent treated, monoclonal antibody purified Factor VIII concentrate that was used from 1995[2] was licensed from Baxter (method M).

Conclusions

In my opinion:

i) The NRC Factor VIII concentrate that was introduced in 1990 could be considered to have been safe with respect to hepatitis C, but the higher than expected incidence

of inhibitors and the consequent withdrawal of the product in 1992[2] meant that it was not clinically successful.

ii) As solvent-detergent treated concentrates can be considered to be safe from hepatitis C transmission, the NRC can be considered to have introduced clinically suitable Factor IX and Factor VIII concentrates that were safe from hepatitis C transmission in 1992 and in 1995 respectively. The equivalent SNBTS dates were 1985 and 1987 respectively.

References

1. Tersmette M, de Goede REY, Over J, de Jonge E, Radema H, Lucas CJ, Huisman HG & Miedema F. Thermal inactivation of human immunodeficiency virus in lyophilised blood products evaluated by ID_{50} titration. *Vox Sanguinis* 1986, **51**, 239-243.

2. Mauser-Bunschoten EP, Zaaijet HL, van Drimmelen AAJ, de vries S, Roosendaal G, van den Berg HM & Lelie PN. High prevalence of parvovirus B19 IgG antibodies among Dutch haemophilia patients. *Vox Sanguinis* 1998, **74**, 225-227.

3. Mauser-Bunschoten EP, Bresters D, van Drimmelen AAJ, Roosendaal G, Cuypers HTM, Reesink HW, van der Poel CL, van den Berg HM & Lelie PN. Hepatitis C infection and viremia in Dutch hemophilia patients. *Journal of Medical Virology* 1995, **45**, 241-246.

4. Benny AG, Scott RG & Woodfield DG. A heat-treated factor VIII concentrate prepared by controlled-pore glass adsorption chromatography. *Transfusion* 1987, **27**, 174-177.

5. Peerlinck K, Arnout J, Gilles JG, Saint-Remy JM & Vermylen J. A higher than expected incidence of factor VIII inhibitors in multitransfused haemophilia A patients treated with an intermediate purity pasteurized factor VIII concentrate. *Thrombosis Haemostasis* 1993, **69**, 115-118.

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