ADDENDUM BRIEF FOR EXPERT ON HYPONATRAEMIA
ADAM STRAIN

Introduction

1. You have provided the Inquiry with 3 Reports on Adam: an initial Report, a Response to an addendum brief and an updated version of your initial Report. We should be grateful if you would address the following discrete issues that that arise out of your advice to date.

Issues

2. Adam was prescribed with 50ml 20% mannitol intravenously by Dr. Mary O'Connor at 12:00 on 27th November 1995 on his transfer to PICU after surgery. He was prescribed a further 100ml of 20% mannitol by Dr. Meenakshi Bhat from 14:00 that day. He passed 115ml of urine between 12:00 and 13:00, 35ml between 13:00 and 14:00, 90ml between 14:00 and 15:00 and thereafter between 80ml and 140ml/hr of urine (a mean of 90ml/hr) between 15:00 and 23:00. Input was approximately 247ml between midday and 23:00. By 20:00, he had produced 809ml of urine. Within 24 hours of arriving in PICU, he had produced 1,460ml of urine. (Ref: 057-018-027)
   (a) Please explain your view of the urine output capabilities of Adam's native kidneys having regard to the effect of the mannitol stimulus in PICU.

3. Dr. Alison Armour states in her final autopsy report that Adam's brain weight after fixation was 1,680gms. In her contemporaneous notes of the autopsy (attached Ref: INQ-0319-11), she noted:

20

"Brain: Weighed 1,302gms. To be described after fixation.

Spinal Cord: To be described after fixation"

In addition, in her letter to Professor Berry dated 22nd December 1995 (Ref: 011-029-151), she stated *"At postmortem, I found gross cerebral oedema (1,320 gms.)"* (Ref: 011-029-152).

However, in her witness statement to the Inquiry (attached WS-012-2), Dr Armour states:

- that Adam's brain was *"from memory [...] massively swollen"* (Answer to Question 10(a))

- the average weight of a brain for a boy of Adam's age was 1,300g when unfixed. (Answer to Question 10(b))

- the figures of 1,302 gms and 1,320 gms were *"probably an error"* and that *"[d]uring fixation the brain increases in weight from between 5% and 10% with the fixed weight being 1680g. As I described massive cerebral oedema it is my view that the fresh weight of the brain was more likely to be 1520g"* (Answer to Question 10(e)

When asked about the letter to Professor Berry and the brain weight given of 1,320gms, Dr Armour states:

- *"In my view, this is the fresh weight of the brain"* (Answer to Question 26(a)

- She did not mention the fixed brain weight of 1,680g because *"it is impossible to inform someone of the fixed weight of the brain prior to it actually being fixed"*

(b) Please outline any further comments that you have arising out of these statements from Dr. Alison Armour, particularly with reference to your previous comments regarding Adam's brain weight on pages 7-10 of your report of 2nd January 2011.

4. Please find attached a blank table regarding Adam's fluid balance. We should be grateful if you could fill in the table as follows:

(a) State what you consider Adam's daily fluid intake to have been prior to his admission to RBHSC on 26th November 1995.

(b) State what you consider Adam's average daily fluid output to have been prior to his admission to RBHSC on 26th November 1995.

(c) State what you consider Adam's fluid losses to have been at each of the indicated stages on 26th and 27th November 1995, including your calculations and losses due to:

(i) Insensible losses

(ii) Urine output

(iii) Blood loss

(iv) Dialysis loss

Please find attached Adam's dialysis diary completed by his mother in the months prior to his death. An analysis of Adam's fluid loss produced by overnight peritoneal dialysis on 70 nights in July to October 1995 showed variation from about 138 ml to 642 ml; average 290 ml. On one occasion when only 7 cycles were used, loss was reduced to 82 ml.

(d) State what fluid was actually received by Adam at each of the indicated stages on 26th and 27th November 1995.

(e) Given what you consider Adam's fluid losses and fluid intake to have been state what you calculate as his fluid excess/deficit at each of the indicated stages on 26th and 27th November 1995.

(f) Please provide your comments on the sodium content of the input fluids and losses.

5. Please find attached a table showing the various phases in a paediatric renal transplant operation. Please modify it, as you consider appropriate, so that it reflects what you consider should have happened and identify under those phases the personnel who you consider should have been involved.

Conclusion

6. It is of fundamental importance that the Inquiry receives a clear reasoned opinion on these issues.

7. Your assistance on the Inquiry's requirements should be provided in the form of a fully referenced Expert's Report.