

17. Having reviewed the clinical and autopsy information in relation to Ms Killen, Dr Rothwell commented:

*"Samantha exhibited a number of signs and symptoms of severe EAH (Exercise associated Hyponatraemia) namely Ataxia (unsteadiness) agitation, confusion, delirium, vomiting, obtundation seizure, respiratory distress, coma leading to death."*

18. Dr Rothwell's opinion was that the autopsy findings were consistent with severe hyponatraemia, with death due to a cardiac arrhythmia in the setting of electrolyte derangement. He noted there was evidence of cerebral oedema on post mortem CT Scan and pulmonary oedema on autopsy. Dr Rothwell concluded that in his opinion, exercise associated hyponatraemia was the likely cause of Samantha's death.

19. Dr Lynch was asked by the coroner to review his finding in the context of the information which had been received from Dr Rothwell. He has confirmed his initial advice that should there be objective evidence of excessive water intake in Ms Killen, the autopsy findings would be consistent with death being due to a cardiac arrhythmia in the setting of electrolyte derangement. Post mortem CT revealed cerebral oedema and pulmonary oedema was noted by Dr Lynch at autopsy.

20. Dr Lynch in his supplementary report dated 20 December 2011 stated:

*"In my original report I considered the cause of death to be undetermined. I was provided with an opinion from an anaesthetist Dr Ian Balsom to the effect that hyponatraemia may have been a contributing factor and I concluded my autopsy findings would be consistent with such a mechanism. I have also been made aware of a report from a Dr Rothwell indicating a view that the likely cause of death was in fact exercise associated hyponatraemia (EAH) in the setting of excessive water consumption. I would reiterate that my autopsy findings are consistent with such a cause of death with the mechanism of death likely to have been a cardiac arrhythmia."*

21. There were also a number of factors in Dr Rothwell's report which he reported were relevant to the development of exercise acquired hyponatraemia, one of which included excessive fluid consumption.

22. I have been assisted by the reports of the expert witnesses in this case. The difficulty in this case is that, unlike in the research conducted on the trail by Dr Rothwell and his colleagues, there are no reliable ante mortem samples or records, which would evidence hyponatraemia. Nor is there definitive evidence of the amount of fluid consumed by Ms Killen, the excessive consumption of which was described by Dr Lynch as being necessary to enable such a conclusion to be drawn. There is however evidence that Samantha herself had commented upon how much and how frequently she was drinking.