ONE HOSPITAL’S EXPERIENCE OF THE 2011 LONDON MARATHON

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AIM
To describe a series of patients who were admitted to Chelsea and Westminster Hospital following the London Marathon 2011.

BACKGROUND
The London Marathon is one of the biggest sporting events in the world. It has been held every spring since 1981 and is one of the biggest running events in the world. Over 36,000 participants ran the 31st London Marathon on 17th April 2011. Planning for the marathon takes many months and stakeholders include marathon organisers, emergency health services, the Metropolitan Police and St. John Ambulance, who provide over 1,000 volunteer staff for the event.

Medical cover is provided by medical staff including those trained in primary care, emergency medicine and intensive care. In order to plan the emergency response, a number of hospitals are pre-designated to receive casualties from the marathon. Our hospital was not one of the designated receiving units for marathon related casualties.

METHODOLOGY
We analysed the case-notes and results of patients admitted to our unit after the marathon. Results, where available, were charted onto a Microsoft Excel Spreadsheet.

OUTCOME AND RESULTS

Seven patients (5 male, 2 female) attended A&E after collapsing at the marathon, all of whom were subsequently admitted to the Acute Assessment Unit. The average patient age was 36.9 (range 28-49) which was younger than the average age of the London Marathon runner of 38. Four patients had never run a marathon previously and all collapsed at the finish. All but one of the patients ran the marathon solo.

All patients experienced a significant rise in creatine kinase. Only three patients had their urea and electrolytes measured. Three patients had cardiac troponins tested, all of which were elevated and subsequently fell. None of these were felt to be significant after review by a cardiologist. The average length of stay was 1.57 days.

Patient A
28 year old female from New Zealand. She had never run a marathon before but completed the marathon at mile 26.2. She presented with vomiting. Her troponin was raised at 0.036 (normal < 0.032) and she was treated for Acute Coronary Syndrome (ACS) despite never having chest pain or ECG changes. She was reviewed by the cardiologists who stopped her treatment and discharged her the next day.

Patient B
49 year old female from the UK. She had never run a marathon before but completed the marathon walking with her daughter at mile 26.2. She presented with a sharp chest pain which started at mile 6. Her troponin was raised at 0.55 (normal < 0.032) and she was treated for ACS. She was reviewed by the cardiologists who stopped her treatment as she had no ECG changes, never had chest pain during training and continued the marathon despite pain at mile 6.

Patient C
32 year old South African male who had previously run the London marathon in 2008. He presented having collapsed at mile 24.5. His GCS on arrival was 11. His initial temperature was 41° C and his pH on ABG was 7.29 with a lactate of 4.5. He was aggressively treated with sodium bicarbonate, saline and glucose. An echocardiogram showed normal left ventricular function and normal ejection fraction with no evidence of cardiomyopathy.

Patient D
36 year old British male who had never run the London marathon before. He self presented to the hospital with bilateral leg pain after completing the marathon at mile 26.2. His troponin levels were tested despite never experiencing any chest pain and it was raised at 0.153. This was reviewed by the cardiologists and deemed non significant.

Patient E
32 year old British male who had never run the London marathon before. He self presented to the hospital with bilateral leg pain after completing the marathon at mile 26.2. His troponin levels were tested despite never experiencing any chest pain and it was raised at 0.153. This was reviewed by the cardiologists and deemed non significant.

Patient F
44 year old British male who had previously run 3 marathons including the 2010 London marathon. He presented with confusion having collapsed at mile 25.

DISCUSSION

Marathon running places huge stresses on the human body. Exercise associated collapse can be associated with exertional heat illness/rhabdomyolysis or exertional hyponatraemia. The temperature at this year marathon reached a maximum of 19° C. Had the temperature been higher, there would almost certainly be more exertional heat illness.

Management of exercise associated illnesses are should be guided by symptoms, signs and CK levels. Ceasing activity, rest during recovery and early aggressive fluid and electrolyte replacement are the mainstays of treatment. Prevention of such illness includes regular fluid/electrolyte replacement during the course of the marathon.

Exercise induced troponin rises are most likely benign. Emergency Departments and Acute Medical Units should be prepared for marathon related illnesses and educate clinicians to make informed decisions on appropriate use of tests in patients presenting after exercise. This will prevent unnecessary investigation and treatment of exercise related physiologic changes.

REFERENCES


Presented at the Society for Acute Medicine International Meeting 29 – 30th September 2011