FEVER AFTER DIRECTED DONOR RBCS
Case Study by Jim Perkins, (©2009)

A 57 year old woman received 2 units of RBCs after nephrectomy. After the second unit, which was a directed donation from her son, she developed a severe rigor and back pain, followed by an increase in temperature from 37°C before the second unit to 38.1^{o}, 40 minutes after developing the rigor. This was associated with tachycardia (PR from 98 to 117) and hypertension (from 158/70 to 222/107).

A transfusion reaction evaluation was ordered. There was no clerical error. The post-transfusion specimen showed no evidence of hemoglobinemia or icterus on inspection of the plasma. Repeat blood typing of patient and both units revealed no errors (all were A positive). The direct antiglobulin test (DAT) on the post-transfusion sample was negative, as was the antibody screen and repeat crossmatches of the units by the indirect-antiglobulin-test. Finally, a culture of the remainder of the second unit was negative.

The units of RBCs had not been leukocyte reduced. The patient had two children and had been transfused at age 5.

Questions:

1. What is the differential diagnosis of this patient's fever? Which of those possibilities do you think is responsible for this patient's fever?

2. What is the mechanism of this type of reaction? Is the fact that this was a directed donation relevant in any way?

3. What might be done to prevent such reactions in this patient in the future?