

ABO discrepancy #4 Case Study by Jim Perkins MD (©, 2009)

A "type-and-screen" is received from a pediatrician. The patient is a two year old male with a history of recurrent otitis media. The following reactions are obtained on initial testing.

ABO and Rh Typing

	Anti-		Test Cells		Anti-			Interp.	
	A	B	A1	B	D	Wk D	Cont	ABO	Rh
IS	3+	0	0	0	4+		0		

Antibody screen (4 drops serum, 1 drop RBCs)

	IS	30'37°	AHG	CC
OI	0	0	0	2+
OII	0	0	0	2+
OIII	0	0	0	2+
Auto	0	0	0	2+

The patient's serum was tested with additional reagent RBCs from different lots and manufacturers as follows:

RBC type	Lot #	IS	RT	15°C	4°C	37°C	AHG	CC
A₁	1	0	0	0	0	0	0	2+
A₁	2	0	0	0	0	0	0	2+
A₁	3	0	0	0	0	0	0	2+
A₂	1	0	0	0	0	0	0	2+
A₂	2	0	0	0	0	0	0	2+
A₂	3	0	0	0	0	0	0	2+
B	1	0	0	0	0	0	0	2+
B	2	0	0	0	0	0	0	2+
B	3	0	0	0	0	0	0	2+
Auto		0	0	0	0	0	0	2+

The patient's RBCs were tested with additional samples of reagent anti-B from different lots and manufacturers as follows:

Antibody	Lot #	IS	RT	15°C	4°C
Anti-B	1	0	0	0	0
Anti-B	2	0	0	0	0
Anti-B	3	0	0	0	0

ABO Discrepancy #4

1. What is the forward ABO type? If that is correct, what anomaly must one explain?
2. What is the reverse ABO type? If that is correct, what anomaly must one explain?
3. Which of these two hypotheses did the technologist investigate? What information in the history and type-and-screen results prompted him or her to do so? What is the cause of this ABO discrepancy?
4. Why were the patient's cells run against multiple anti-B reagents?
5. Given the clinical information, what is a possible diagnosis?
6. What further clinical laboratory tests would you like to order?
7. What other patients might present with weaker than expected reverse grouping tests?