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Blood Grouping Compatibility and Transfusion Records

Practical 06 / Teaching laboratory

Aim

Interpret forward/reverse ABO, RhD, antibody screen and compatibility records in a simulated blood bank case.

Principle

Transfusion safety begins with uninterrupted patient and product identification. ABO grouping, antibody screening and compatibility testing answer separate questions.

Materials and Requirements

- Non-biological blood bank trainer and simulated reaction table
- Fictional patient request and unit label
- Compatibility checklist

Procedure

1. Check identifiers on request, specimen, result and product label. Stop the scenario if any identifiers conflict.
2. Pair the teaching specimen, request and compatibility form. Compare component identification, type and requirement with the simulated order and escalate any mismatch before the compatibility exercise.
3. Read forward ABO, reverse ABO where appropriate, and RhD controls. Flag any discrepancy before proceeding.
4. Record each agglutination reaction and strength in its own row. Compare the forward cell group with the serum grouping where applicable and verify validity of the RhD and other required controls.

Continue with step 5 on the next page.

Procedure Continued

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5. Review the antibody screen and crossmatch method and results. Identify the responsibility for unresolved or emergency issues.
6. Follow the training record in order from antibody screen through unit selection and compatibility testing. Identify the patient sample, donor unit and final authorised compatibility entry.
7. Demonstrate the bedside check with the training unit and case wristband under supervision. Verify order, consent, identity, component number, compatibility, special requirements, expiry and baseline observations.
8. If a reaction is suspected, stop the simulated transfusion and call for help. Assess airway, breathing and circulation and monitor vital signs. Keep IV access without flushing the existing blood line. Use separate access when needed under the facility procedure.
9. Repeat the identity checks. Notify the responsible clinician and transfusion service and retain the mock component, tubing and records for review.
10. Record what was administered or withheld, time, observations and person informed. Compare the unit number with the record before closing the scenario.

Precautions

- Use only training products in the station.
- Real reactions or compatibility decisions require the authorised clinical and transfusion service pathway.

Observations and Interpretation

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Observations and Record

Item	What to record	What it tells you
Patient and unit identity	Matched identifiers and dates	Prevents mistransfusion
ABO/RhD and screen	Valid reactions and historical comparison	Documents grouping and antibody information
Compatibility	Crossmatch result and authorisation	Supports issue only under the approved protocol

Worked Example

In a fictional adult specimen, forward grouping suggests A but reverse grouping is discordant. Hold the routine simulated issue and refer the discrepancy to the blood bank.

Result and Interpretation

Present an identity-first compatibility assessment and specify the unresolved issue or authorised decision.

Viva Questions and Answers

What is the goal of crossmatching?

To assess compatibility between a selected red cell unit and the intended recipient under the relevant method.

Can a known group replace identity checking?

Identity verification is still required at each relevant stage.

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