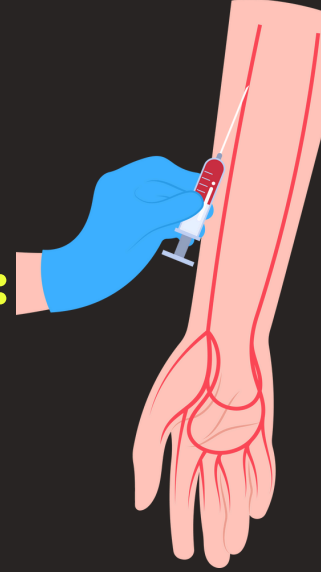


CONTAMINATION OF BLOOD CULTURES DRAWN FROM ARTERIAL CATHETERS VERSUS VENIPUNCTURE OR VENOUS CATHETERS IN CRITICALLY ILL PATIENTS: A SRMA



WHY IMPORTANT TO KNOW?

- **Blood culture contamination** leads to misdiagnosis and antibiotic overuse.
- Blood takings may be difficult in critically ill patients.
- Guidelines discourage catheter drawn bloods mostly based on **venous data**.
- This study focuses on **arterial lines**- commonly used in ICU.

HOW THEY STUDIED IT?

- **Systematic review & meta-analysis** of 6 observational studies (n = 8,533 cultures).
- Compared contamination rates between **Arterial catheter** vs **venipuncture or venous catheter**
- Primary outcome: **Contamination rate**
- Used **random-effects model** and **GRADE** to assess

RESULTS

Arterial catheter vs. venipuncture:

Contamination: 2.1% vs 2.3%

Risk difference: 0.01 (95% CI: -0.01 to 0.02)

Arterial catheter vs. venous catheter:

Contamination: 3.1% vs 8.0%

Risk difference: -0.05 (95% CI: -0.11 to 0.01)

Lower contamination in arterial cath compared venous source.



LIMITATIONS



- All studies were **observational**; no RCTs available.
- **High heterogeneity** in methods and definitions of contamination.
- Pediatric subgroup limited; findings **not generalizable** to children.
- Varied catheter insertion practices & antiseptic protocols.

TAKE HOME MESSAGE

- Arterial catheter cultures are **comparable to venipuncture** and **may be better than venous catheters**.
- In ICU patients where venipuncture is hard, **arterial sampling is a reasonable alternative**.
- Findings challenge current practice, but more robust studies needed to **inform guideline changes**.