

Self-sampling by patients and clinical staff using 3 microsampling devices-data from 4 clinical studies

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Introduction: Microsampling in patient care is increasing due to minimally invasive nature, support for at-home collection, improved monitoring and compliance and facilitation of remote diagnostics. However, successful implementation depends on sample adequacy especially for quantitative analysis.

Aims: To assess the quality of microsampling undertaken by patients and clinical staff for 3 devices, **Mitra® VAMS™**, **Telimmune™ DUO** plasma separation card and **hemaPEN™**.

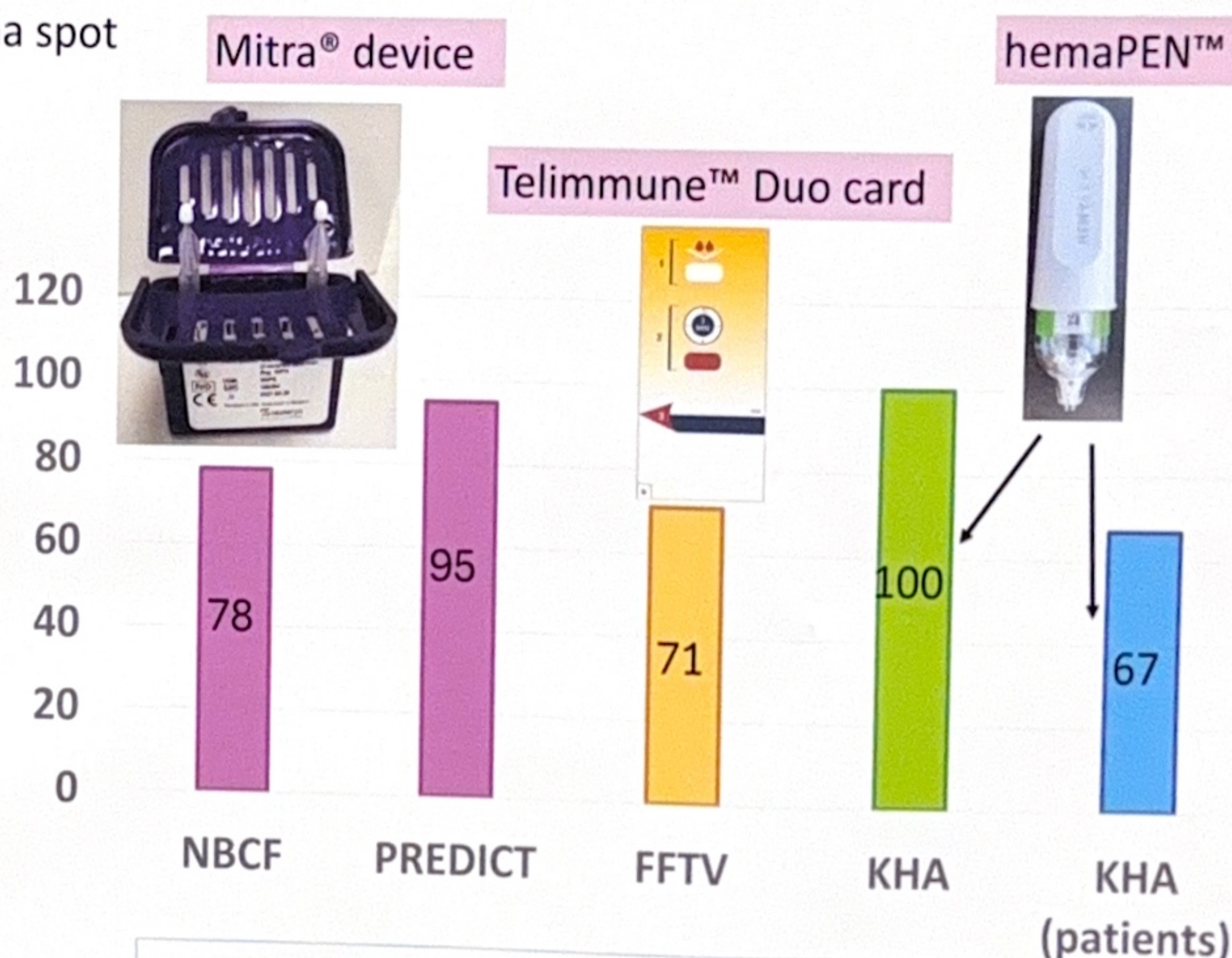
Methods: Patients with cancers (NBCF, n=110; FFTV, n=24; PREDICT, n=50) and kidney transplant recipients (KHA, n=50) underwent finger prick sample collection by clinical staff and self-sampling (KHA) using 3 microsampling devices.

- **Mitra® VAMS™** (2-sampler, 10 µL whole blood)
- **Telimmune™ Duo** plasma separation card (~65 µL, 2x 3µL dried plasma spot)
- **hemaPEN™** (~11 µL, 4x 2.74 µL dried blood spot)

- ❖ Sample quality was assessed by a Lab Scientist:
- Mitra®**, at least 1 adequate polymer tip
- Telimmune™ Duo**, at least 1 good-quality dried plasma spot
- hemaPEN™**, at least 2 adequate dried spots

Results:

Figure 1. Overall sample success rate (%) for different devices



Clinical staff:

Mitra® 78% (86/110), NBCF
95% (63/66), PREDICT

Telimmune® 71% (17/24), FFTV
hemaPEN™ 100% (50/50), KHA

Patients:

hemaPEN™ 67% (45/67), KHA

Discussion:

Sample quality was adequate for staff collection (≥71% across devices) but lower for patient collection (67%). Dedicated clinical staff (PREDICT/KHA) had higher success rate. Sample volume (Telimmune™ vs. Mitra®) and infrequent device use (i.e., long-term recruitment, NBCF) also influenced success rates.

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Study protocol

