"Peri-analytics" reference ranges for drug screening in oral fluid using the Greiner-Bio-One collection device
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Introduction
Oral fluid (OF) attracts increasing interest in drug of abuse testing of methadone maintenance patients and are within other settings. The ease of non-invasive sampling and the potential for a second/third sample by the patient. Nevertheless, "peri-analytics" tests for validation of specimens are needed. The term "peri-analytics" in our lab defines all kind of analysis and observations around a sample to exclude falsification. These are a lot of different collection devices available with sometimes non-repeatable differences in 1. Influences of analytical conditions: We defined for a liquid-based device buffered at acidic pH to assure that sufficient sample volume is collected in a reasonable time when xenoromic patients are tested. The absence of interferents which could interfere in our chromatographic method or in sample preparation. 2. Interferences in chromatographic methods. We defined for a liquid-based device buffered at acidic pH to assure that sufficient sample volume is collected in a reasonable time when xenoromic patients are tested. The absence of interferents which could interfere in our chromatographic method or in sample preparation.

Methods
Details

Results

1. %OF concentration

Fig.1a males PG, n=257

Fig.1b females PG, n=833

Fig.1c males NG, n=227

Fig.1d females NG, n=153

Fig.1e total YG, n=75

2. OF volume [mL]

Fig.2 descriptive statistics

3. Amylase concentration in OF

Fig.3a males PG, n=257, no. of samples <5000: 26

Fig.3b females PG, n=833, no. of samples <5000: 5

Fig.3c total YG, n=75, no. of samples <5000: 1

4. Cortisol concentration in OF

Fig.4a total PG, n=200

Fig.4b total YG, n=75

Conclusion
- The four peri-analytics markers were independent and seem not to be correlated. Parallel reduced values may therefore be indicative for adulteration, shortened collection time etc.
- All four parameters investigated are promising to prove the authenticity of an OF sample.
- Opiates addicts demand separate reference ranges for Cortisol.
- Distribution of %OF concentration in PG suggests that prolonged collection time for xenoromic patients like opiate addicts must be considered.