Usefulness of nociception monitors to titrate remifentanil with a stable low noxious stimulation response index (NSRI)

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Anesthesia

- Hypnosis
- Immobility
- Control of Autonomous Nervous System a.k.a. anti-nociception
Study design

- 24 patients (ASA class 1-2)
- Robotic assisted radical prostatectomy
- Dissection phase (stable surgical stimulation)
- 20 min measurement intervals
- Remifentanil Ce 1 – 3 – 5 ng/mL (Minto) in randomized order
- End-expired desflurane (F_{ET,des}) targeted to keep NSRI 5
Surfing the NSRI 5 isobole

Do nociception monitors help us to find the ‘sweet spot’ on the isobole?
Results

$C_e$ remifentanil = 1 ng/mL

$C_e$ remifentanil = 3 ng/mL

$C_e$ remifentanil = 5 ng/mL
Prediction probability

Remifentanil Ce(ng/mL)

End-expired desflurane concentration (%)

P_k = 0.100

P_k = 0.519

P_k = 0.470

P_k = 0.477

NOL index

SPI
NSRI 5 too low? ↔ 0.6 MAC in Remi Ce 5 ng/mL group

Do nociception-monitors reflect the level of (anti)nociception rather than Ce opioid?

Further studies required at higher NSRI