Actigraphic monitoring of physical activity in clinical trials in schizophrenia

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Conflict of interest

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Speaker’s fees:  Sandoz, Janssen-Cilag
Travel assistance: Sandoz
Stock ownership: none
Actigraphy
Behavior and symptoms

Hypokinesia and obesity

- Sedentary behaviors
- Less exercise
- Related to poor QoL

Hypokinesia and negative syndrome

- PANSS negative
- PANSS avolition subscore

Movement patterns

- Irregular patterns – positive syndrome & disorganization
- Reduced activity – negative syndrome

Negative Syndrome

Nosological Subgroups

Medication Effects

Longitudinal course within episode

PANSS total ↓
PANSS pos ↓
PANSS neg ↓
CPZ =

![Graph showing PANSS total decrease](image)

Time effect
Time x group effect

Group effect

Low AL at baseline:
High PANSS negative will decline

High AL at baseline:
Low, stable PANSS negative

r = 0.43
p = 0.012
Longitudinal course *between* episodes

PANSS total ➔
PANSS pos ➔
PANSS neg ➔
CPZ ➔

**Group effect**

**Time x group effect**

**Percentiles**
- AL Baseline
- low
- middle
- high

Activity level

**High AL at index episode:**
- Increase in PANSS negative
- Decrease in Activity

**Activity Level Index Episode**

$r = 0.81$

$p < 0.001$

Walther et al. in preparation
Actigraphy in clinical trials

Potentials

- Large datasets:
  - Centralized analysis
  - Simple application
  - Well tolerated
  - Tolerates missing values

- Added value:
  - Continuous recording of activity and circadian rhythms
  - Combination with experience based sampling
  - Focus on trajectories

Problems

- More details needed:
  - Medication (prospective)
  - Occupational status

- Additional self report:
  - Activity/sleep protocol
Putative value of actigraphy in clinical trials

Identify subgroups
- low/high physical activity
- Schizophrenia subgroups

Monitor dimensions
- Negative syndrome
- Abnormal motor behavior

Outcome marker
- Physical activity
- Avolition
- Quality of Life
Thank you!

Our Team

Collaborators

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Actigraphy in MDD
Activity course in MDD

![Activity course in MDD graph]

- **Group**: unipolar, bipolar
- **Time effect**
- **Time x group effect**