Using two adherence assessment methods to guide treatment – a case of uncontrolled epilepsy

Fine Dietrich[1], Stephan Rüegg[2], Samuel Allemann[1], Isabelle Arnet[1]

[1] University of Basel, Pharmaceutical Care Research Group, Pharmaceutical Sciences, Basel, Switzerland
[2] University Hospital Basel, Division of Clinical Neurophysiology and Department of Neurology, Basel, Switzerland

Background

- Antiepileptic treatment is challenging mainly because of its prophylactic nature with multiple active agents
- Inadequate implementation often leads to treatment failure and increases the risk of seizures
- Knowing patients' adherence can guide physicians to adapt treatment [1]

Aim

→ To evaluate two adherence assessment methods, used by an ambulatory patient with uncontrolled epilepsy, to guide treatment.

Case presentation & Methods

Case	Treatment	
• 35-year-old man with focal epilepsy	Lamotrigine 200 mg	1-0-1
• Married, 2 kids, takes the bus to work every day at 7 am	Lamotrigine 100 mg	1-0-1
• Psychosocial conflicting situation	Valproate 300 mg	1-0-2
	Valproate 150 mg	1-0-0
Issues	Sertraline 50 mg	2-0-0
• Several seizures under sub-therapeutic valproate levels	Cenobamate 200 mg	0-0-1
• Medication adherence unknown	Aripiprazole 5 mg	1-0-1

- The patient presented in January 2022 without adherence aids
- Adherence was measured by **pill count** and **electronic monitoring** (the patient registered each intake by pushing a button on the small device Time4Med™)
- The pharmacist analysed the adherence data and discussed them with the patient during face-to-face counselling sessions
- Adherence outcomes:
  - → *Correct dosing days* = ratio of days with the right amount of doses taken
  - → *Timing adherence* = ratio of intakes on schedule (± 25% tolerance range)
- Interventions to enhance adherence were gradually intensified
- Results were communicated to the physician via adherence report [2]

Results

INTERVENTION TIMELINE

- 27, Jan: Start **electronic monitoring** (for 7 weeks)
- 23, Feb: Establishing a morning routine because intakes were mostly missed during stressful mornings
- 28, Feb: The community pharmacy repacked the patient's medicines in weekly **punch cards** (Pharmis®) (for 2 weeks)
- 09, Mar: Dose adjustment of cenobamate due to side effects
- 15, Mar: Stop punch cards and initiation of two weekly **pillboxes** filled and delivered by the pharmacy (ongoing)
- 19, Apr: Admission to an inpatient-clinic with **observed medicine intake** due to uncontrolled situation (for 3 weeks)

MEDICATION ADHERENCE

- *Correct dosing days* was higher by pill count (71%) compared to electronic monitoring (47%, **Fig 1**)
- Electronic monitoring delivered more details on intake behaviour, such as *timing adherence* (56%)

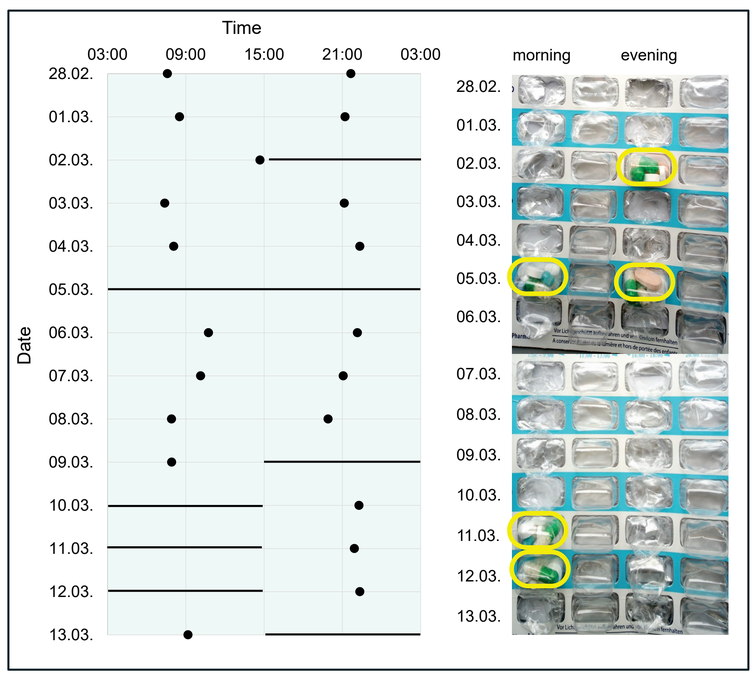

Figure 1 Two weeks of adherence assessment with two methods.
Left: Electronic data showed 1 delayed (02.03. morning) and 8 missed (horizontal lines) intakes.
Right: Punch cards returned by the patient showed 5 unused cavities (yellow ovals).

Conclusion

- Dose dispensing aids (punch cards, pillboxes) enable pill count but are better suited as adherence support
- Electronic monitoring is better suited to provide deeper feedback in counselling sessions and to guide the choice of adherence aids and ultimately treatment

References

[1] Osterberg, L., Blaschke, T. Adherence to medication. *N. Engl. J. Med.* 2005.
[2] Dietrich, F., et al. Communicating electronic adherence data to physicians - consensus-based development of a compact reporting form. *Int J Environ Res Pub Health*, 2021.

Fine Dietrich
fine.dietrich@unibas.ch
Pharmaceutical Care Research Group, University of Basel
Klingelbergstrasse 50, 4056 Basel, Switzerland
www.pharmacare.unibas.ch

reach out on LinkedIn

26th ESPACOMP Conference
Berlin – Germany
17 - 19 November 2022