

Creation and validation of a new tool for the monitoring efficacy of neurogenic bowel dysfunction treatment on response: the MENTOR tool

Authors: Anton Emmanuel, Klaus Krogh, Steven Kirshblum, Peter Christensen, Michele Spinelli, Dirk Van Kuppevelt, Rainer Abel, Dietrich Lieder, Bruno Gallo Santacruz, Kimberley Bain, Valentina Passananti

Introduction

Neurogenic Bowel Dysfunction (NBD) affects up to 80 % of the spinal cord injury (SCI) population. The validated NBD Score allows assessment of the severity of bowel symptoms and correlates with impaired quality of life but does not address clinical decision making in individual patients presenting with an ineffective bowel regimen. Therefore, **Monitoring Efficacy of NBD Treatment On Response (MENTOR)** was developed by a group of international experts in the field of NBD as a standardised way to quickly and accurately assess the effectiveness of NBD treatment regimen in SCI patients.

MENTOR was developed as a three-dimensional tool consisting of the NBD score, subjective patient satisfaction with current treatment, and a list of special attention symptoms. The combined score from the three-dimensions is plotted into a “traffic light” matrix (**Figure 1**) resulting in: **Green** (MONITOR) current treatment is adequate, **Yellow** (DISCUSS) may or may not change treatment or **Red** (ACT) change current treatment.

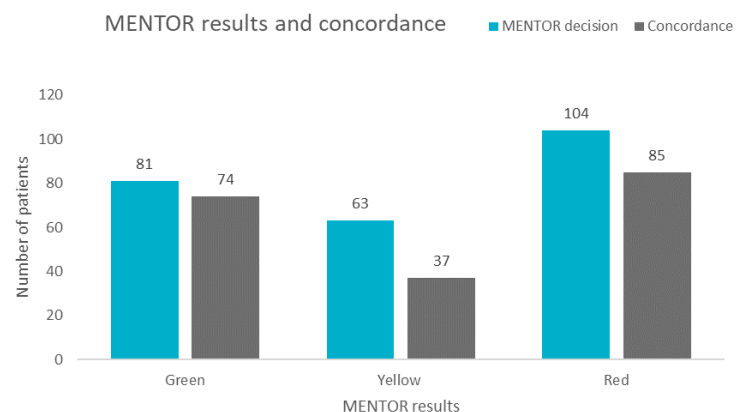
Methodology

The development of the tool (phase I) was performed through a Modified Delphi Process involving international experts and a professional facilitator, resulting in a consensus on the three dimensions being included in the tool.

For validation (phase II) the tool was tested in a blinded multi-centric prospective study¹ in six major clinics (SCI rehabilitation centres and gastroenterology consultations) in UK, Denmark, USA, Italy, The Netherlands and Germany. The **primary endpoint was the concordance of the tool with the decisions of experienced clinicians. The secondary endpoints in the validation were the comprehension and ease of use of the tool by patients.**

Results

A total of 241 unique subjects participated, resulting in 248 completed questionnaires (7 patients had a repeated consultation). Patient consultations from the four SCI rehab units totalled 119 (48 %), whereas patient consultations from two neuro-gastroenterology units were 129 (52 %). The **primary endpoint** showed an overall concordance of 79 % (**Figure 2**). The concordance level for the 2 neuro-gastroenterology units was 95 %, whereas SCI rehab units had a 62 % combined concordance level. **Secondary endpoints** showed mean time to completion was 5.4 (±2.8SD) minutes, with 97 % of the participants finding this tool easy to complete.



Conclusion

This validation study demonstrated an overall concordance of 79 % between the MENTOR tool and the expert clinician’s evaluation and suggests that MENTOR is a reliable tool to support clinical decision-making for NBD in the SCI population.

1. Emmanuel A, Krogh K, Kirshblum S, Christensen P, Spinelli M, Kuppevelt D Van, et al. Creation and validation of a new tool for the monitoring efficacy of neurogenic bowel dysfunction treatment on response : the MENTOR tool. Spinal Cord [Internet]. 2020; Available from: <http://dx.doi.org/10.1038/s41393-020-0424-8>