

High-risk Defining Clinical Parameters for Dysphagia in Parkinson's Disease

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OBJECTIVE

- To define high-risk groups for oropharyngeal dysphagia and laryngeal aspiration using clinical parameters, which are reported to have positive correlations with dysphagia severity in Parkinson's disease (PD).

BACKGROUND

- Dysphagia is a highly relevant symptom in PD, occurring in 50-100% of patients.
- Clinical identification is complex, and dysphagia symptoms are often diagnosed late after life-threatening complications occurred (e.g. aspiration pneumonia, malnutrition/dehydration).

METHODS

- Consecutively enrolled PD patients of a German movement disorders centre underwent neurological examinations, and clinical & fiberoptic endoscopic swallowing evaluations.
- Along the severity grades of underlying rating-scales they were allocated to 3 groups: no dysphagia (A), oropharyngeal dysphagia (B), and dysphagia with penetration/aspiration (C)
- Cut-off values for high-risk groups (A vs C, or A vs B + C) were determined from receiver operating characteristic curves for modified Hoehn & Yahr scale (H&Y), UPDRS motor part, disease duration, age, drooling score scale, dysarthria score, and body mass index.
- Relative risks and 95%-confidence intervals were calculated.

RESULTS

- The 77 patients (mean age 70.5 ± 8.4 , median HY 3) were classified to group A (21), B (34), and C (22).
- Determined cut-offs were identical for both outcome groups (Figure 1).
- Dysphagia risk was significantly increased for almost all parameters.
- Highest clinical relevance was ascertained for UPDRS III and H&Y with an increased risk for dysphagia up to >6 times (Table 1).

CONCLUSION

- Motor performance and the disease stage were closely associated with swallowing performance.
- In clinical practice patients presenting risk factors of UPDRSIII ≥ 26 or HY ≥ 4 should be screened for dysphagia with a validated disease-specific questionnaire (like the MDT-PD¹), and undergo additional diagnostics, if necessary.

Figure 1 a - d shows determined cut-off points for those two clinical parameters discovered as strongest risk factors for dysphagia. (TP True positives, FP False positives)

Figure 1 a: UPDRS III A vs C

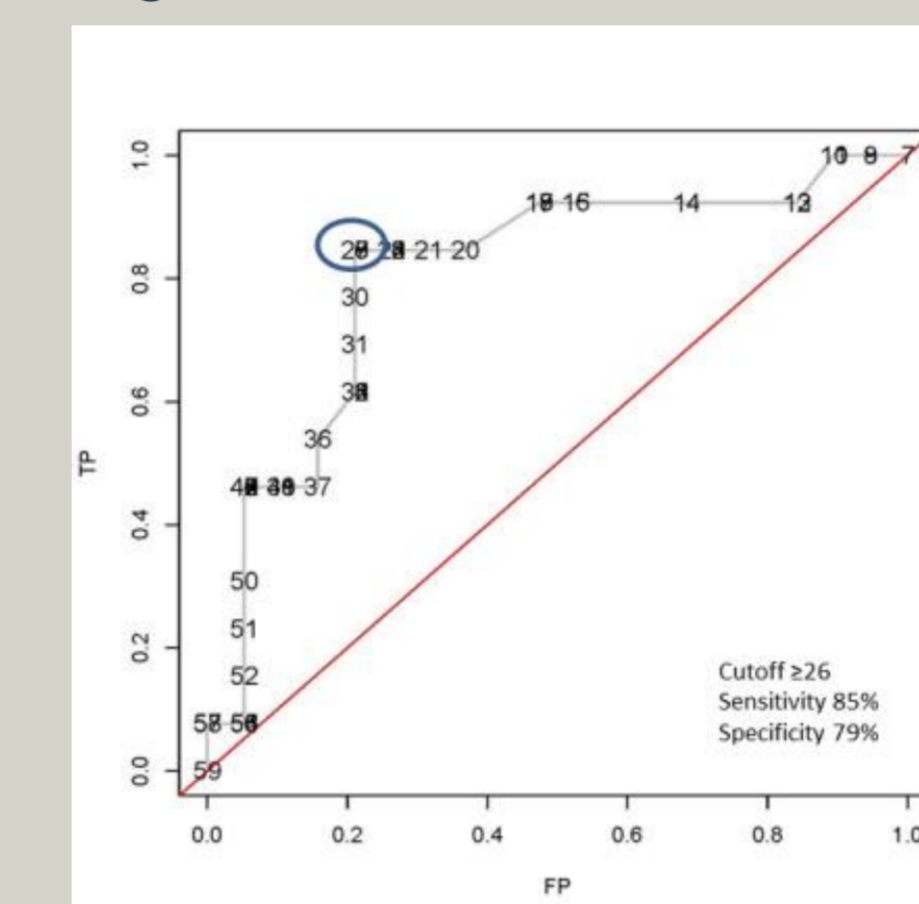


Figure 1 b: UPDRS III A vs B + C

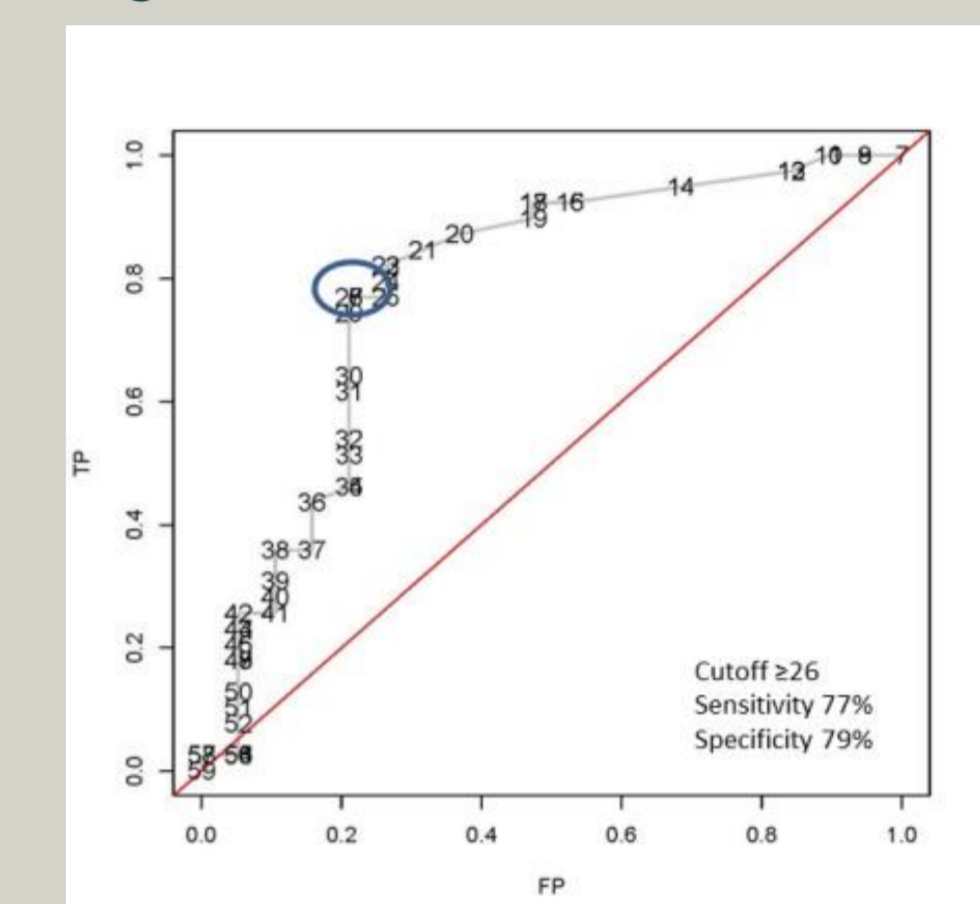


Figure 1 c: H&Y A vs C

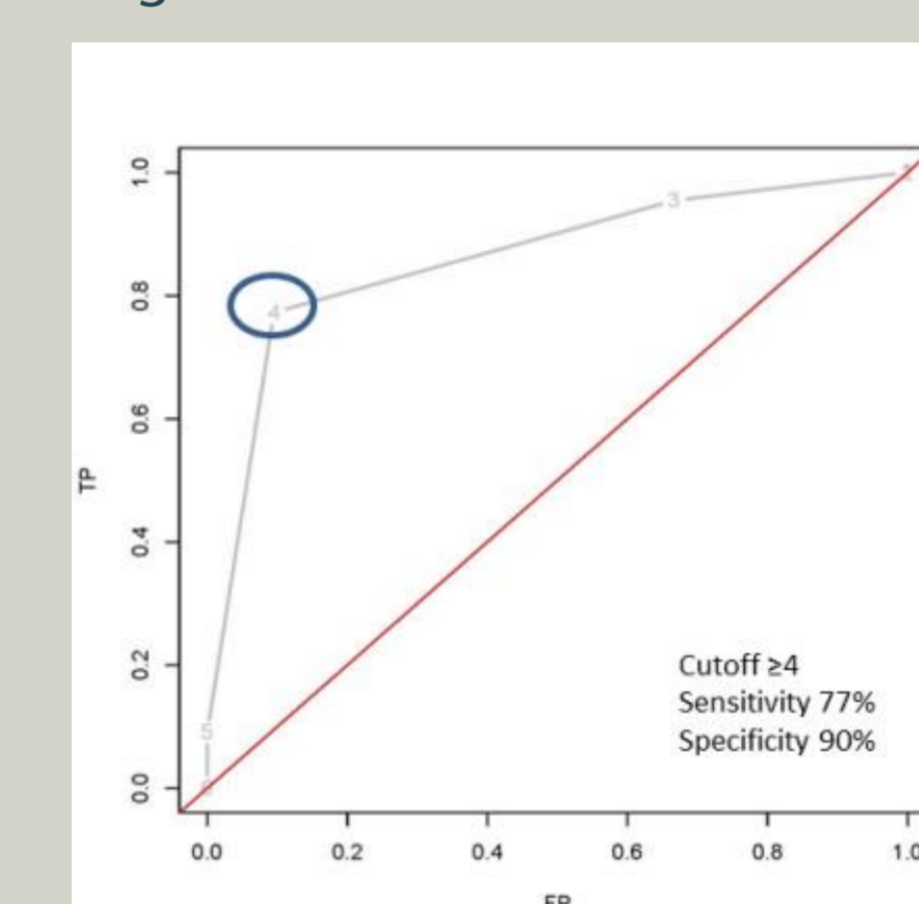


Figure 1 d: H&Y A vs B + C

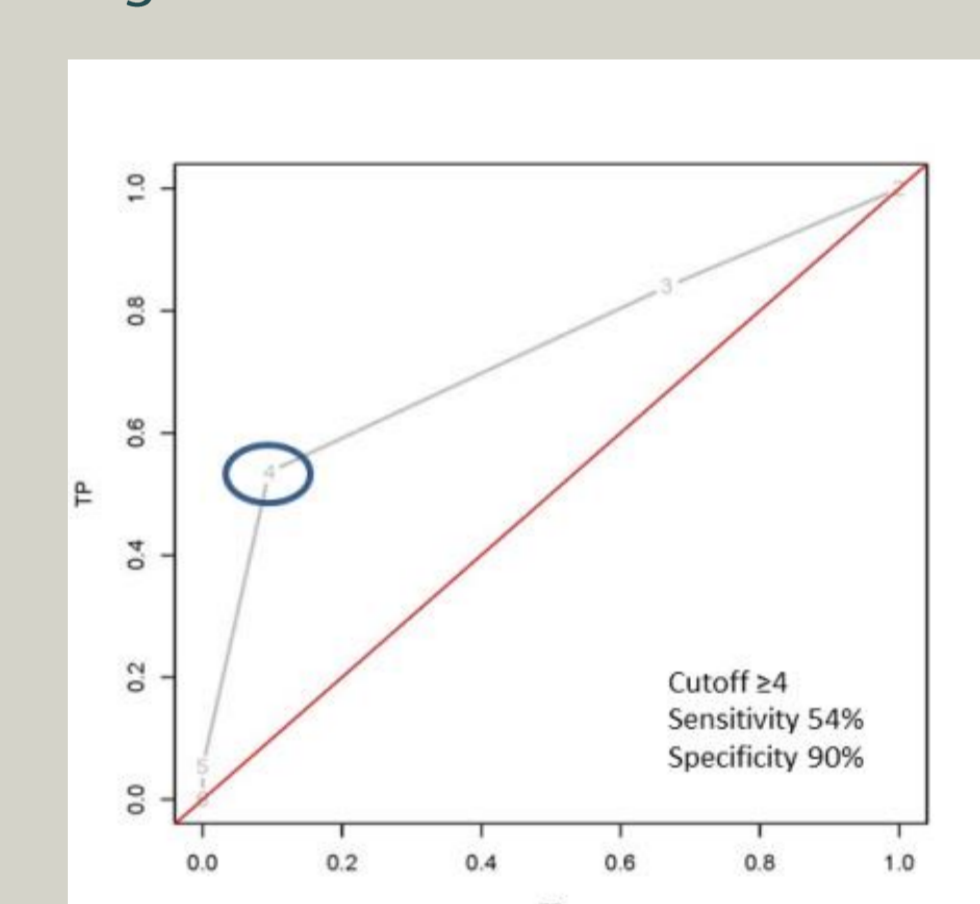


Table 1 shows the relative risks for laryngeal aspiration and/or oropharyngeal dysphagia symptoms for PD patients with the strongest clinical risk factors identified.

Dysphagia outcome	Clinical parameters	Cut-off	RR	95% CI
Group C	UPDRS III	≥ 26	6.23	1.55 – 25.02
	H&Y	≥ 4	4.29	1.90 – 9.73
Group B+C	UPDRS III	≥ 26	2.35	1.37 – 4.05
	H&Y	≥ 4	1.62	1.24 – 2.12

Dysphagia outcome based on clinical and fiberoptic endoscopic evaluation of swallowing (FEES) – Group C: dysphagia with penetration/aspiration; Group B+C: oropharyngeal dysphagia + dysphagia with penetration/aspiration; UPDRS III: Unified Parkinson's Disease Rating Scale, motor part; H&Y: mod. Hoehn & Yahr scale; RR: relative risk, CI: confidence interval

