

INEFFECTIVE ESOPHAGEAL MOTILITY: IS SEVERE COMPROMISE RELEVANT?

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INTRODUCTION

Ineffective esophageal motility (IEM) is a heterogeneous disorder, considered minor in the Chicago classification, as it is not consistently associated with symptoms. It has recently been proposed¹ to analyze this entity using 3 parameters: **severely compromised motility** (above 70% ineffective waves), **multiple rapid swallows (MRS)** and its distal contractile integral (DCI) compared to single swallow (SS), which could reveal **functional reserve** (MRS:SS DCI > 1).

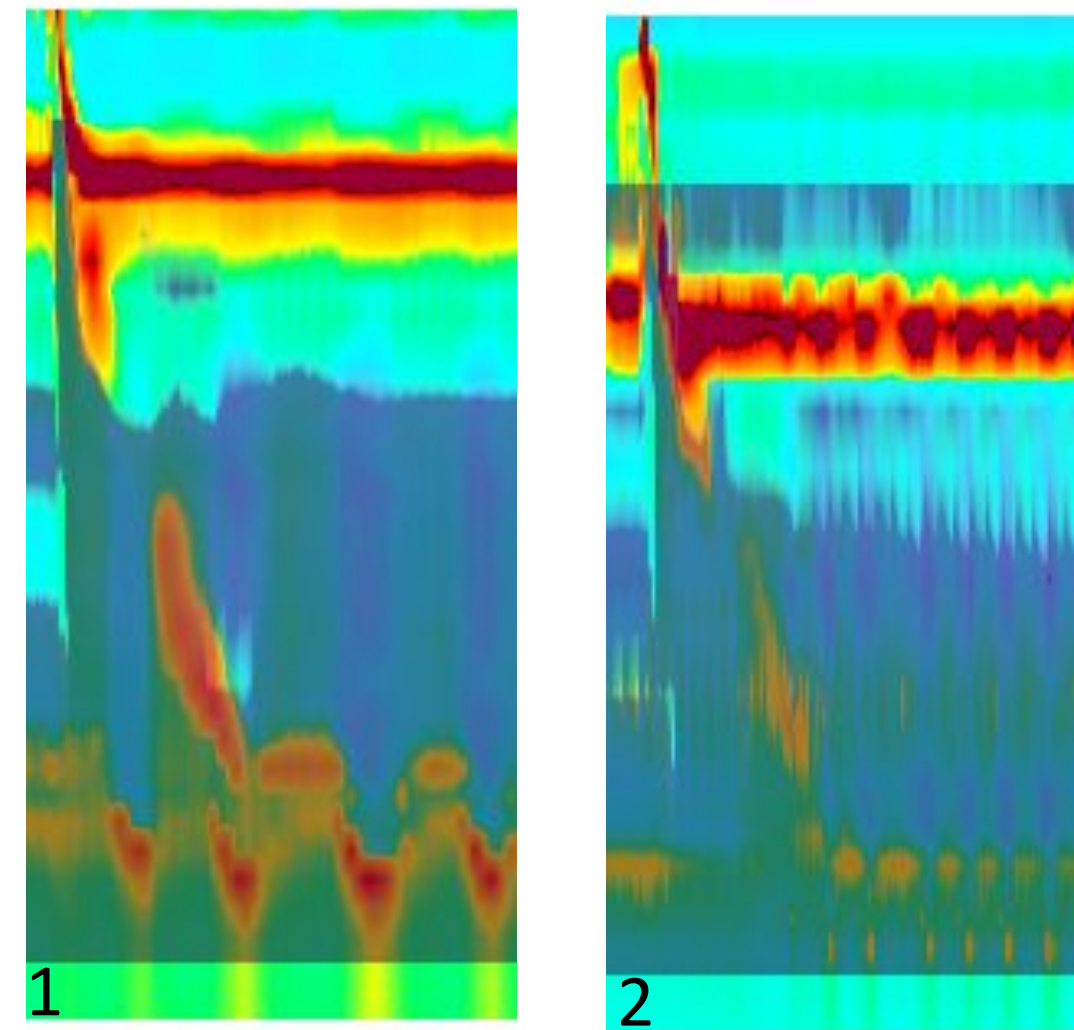


Fig 1 e 2 – Example of a weak and failed esophageal contraction, respectively.

AIMS/METHODS

Evaluation of these new 3 parameters on IEM patients. Retrospective study of patients with a manometric diagnosis of IEM from 2012 to 2019. We used a high-resolution manometry solid state probe with 36 channels and Sandhill software. Following the series of single swallows, rapid 5 swallows of 2 mL normal saline within 10 seconds, after that we calculated the MRSDCI. Patient with reflux symptoms also performed 24h impedance pH monitoring. Extracted data was further analyzed with SPSS v21.0.

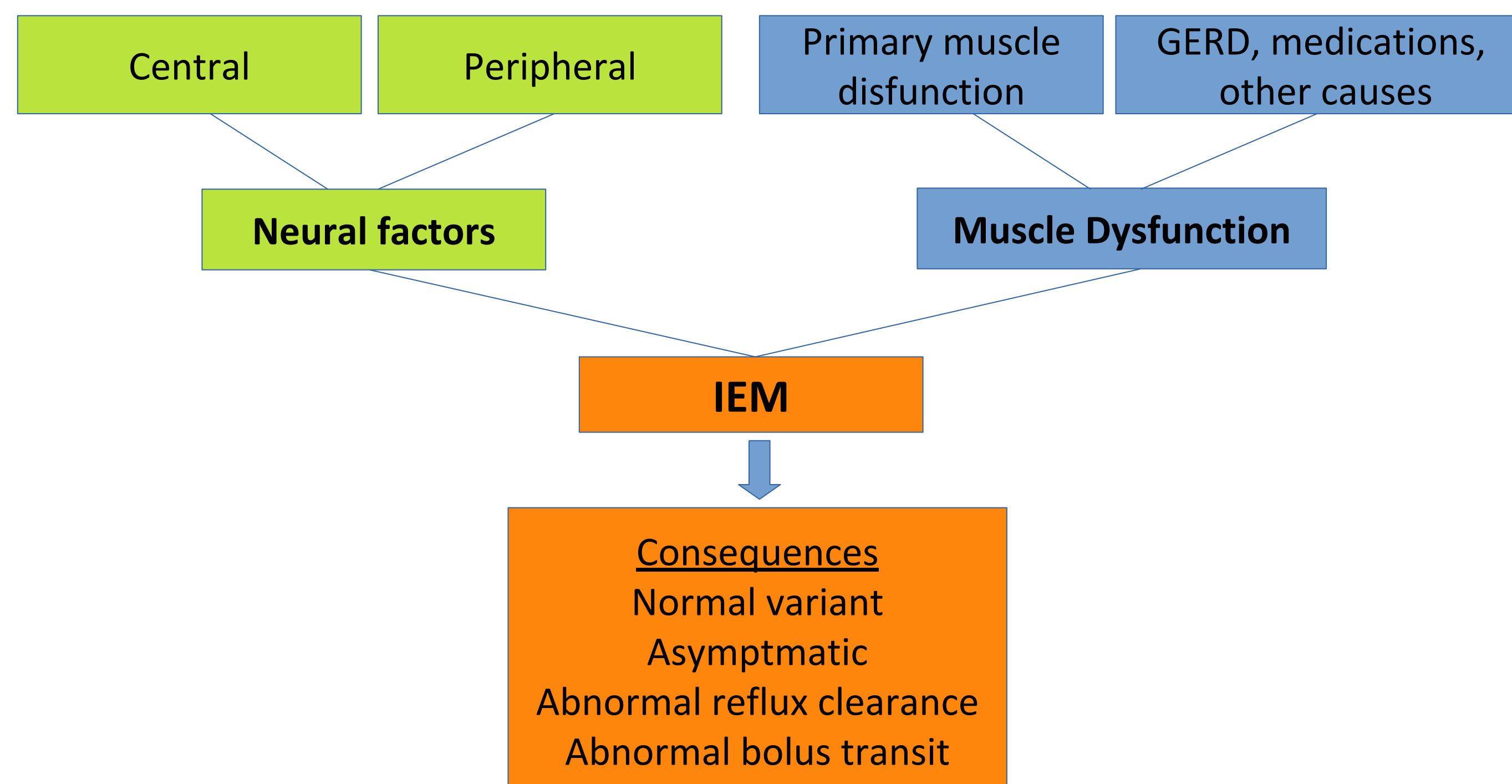


Fig 3 - Fisiopatologia of Ineffective Esophageal Motility

RESULTS

We included 40 patients, 60% (n = 24) female, mean age 56 ± 15 years. The main complaints were heartburn (58%, n = 23) and dysphagia (35%, n = 14). Twenty six patients underwent pH analysis and 42% (n=11) were positive for pathological gastroesophageal reflux.

The **MRS:SS DCI ratio was > 1 in 52% of the population.**

Severe MEI (above 70% ineffective waves) was identified in **68% of the cases**, and was associated with a lower median DCI (255 vs 350 mmHg.s.cm, p = 0.001) but not related to a lower MRSDCI (Severe: 299 vs non-severe: 192 mmHg.s.cm, p = 0,738), and also **not associated with altered functional reserve** (MRS:SS DCI > 1, severe: 70% vs non-severe: 61%, p = 0,734).

Severe MEI was not associated with pathological gastroesophageal reflux (severe: 35% vs non-severe: 55%, p= 0,419).

Table 1. Results of Ineffective Esophageal Motility based on severe or non severe pattern.

IEM	Non Severe	Severe	Statistical value
Median lower ES pressure (mmHg)	13,2	14	p= 0,588
Median IRP (mmHg)	10	8	p= 0,142
Median DCI (mmHg.s.cm)	350	255	p=0.001
MRSDCI (mmHg.s.cm)	192	299	p= 0,738
MRS:SS DCI > 1	61%	70%	p= 0,734
Reflux	55%	35%	p= 0,419

ES- Esophageal sphincter. IRP – Integrated Relaxation Pressure. DCI distal contractile integral. MRS – multiple rapid swallow. SS – single swallow.

CONCLUSIONS

- Patients with severe IEM, defined by >70% ineffective swallows may still have a preserved esophageal functional reserve and were not found to have higher rates of pathological gastroesophageal reflux.
- Patients with ineffective motility and reflux could benefit from a complementary evaluation of MRS and their functional reserve when being candidates for a potential intervention.

REFERENCES

Gyawali C, Sifrim D, Carlson D et al. Ineffective esophageal motility: Concepts, future directions, and conclusions from the Stanford 2018 symposium. *Neurogastroenterology & Motility*. 2019;31(9). doi:10.1111/nmo.13584.