

### Low-intake dehydration and agreement with malnutrition in geriatric patients: An observational study

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#### INTRODUCTION

The prevalence of malnutrition and low-intake dehydration in geriatric patients are high. Low-intake dehydration has been reported to be the most common fluid and electrolyte imbalance in older adults and is associated with poor health outcomes, including increased risk of disability and mortality.

The etiological nature of these conditions makes it relevant to consider whether there might be an overlap.

#### AIM

The aim of this study was to assess the agreement between low-intake dehydration and malnutrition

#### METHOD

Patients ≥65 years and hospitalized at the geriatric hospital ward at Herlev University Hospital between May to November, 2022. Patients were screened for eligibility within 96 hours of admission.

Dehydration were assessed with the calculated serum osmolarity ≥295 mmol/l, by the following equation.

$$1,86 \times (\text{Na} + \text{K}) + 1,15 \times \text{glucose} + \text{urea} + 14^a$$

Risk of malnutrition and malnutrition was assessed by:

- NRS-2002 ≥3 points
- MNA SF ≤7 points
- MNA LF <17 points
- MUST ≥2 points
- GLIM after screening with NRS-2002
- GLIM after screening with MNA-LF

Additionally, the participants were asked about their typical amount of fluid consumption at home.

Statistics used were Chi-squared test, Fishers-exact test, Wilcoxon signed rank test and calculation of kappa values.

#### REFERENCES

<sup>a</sup> Volkert D, Beck AM, Cederholm T, et.al. ESPEN guideline on clinical nutrition and hydration in geriatrics. *Clin Nutri.* 2019;38(1): 10-47.

#### RESULTS

A total of 114 patients were included. Characteristics of included patients are presented in table 1.

Table 1: Patient characteristic

Age, median (IQR)	85,5 (80;89,25)
Gender, n female (%)	65 (57)
CRP, median IQR	48.5 (16.8;123.5)
eGRF, median IQR	60.5 (38.8;78.3)
Admission diagnosis, probable malnutrition, n (%)	2 (1.8)
Admission diagnosis, probable dehydration, n (%)	7 (6.1)
Calculated serum osmolarity ≥ 295 mmol/L n (%)	49 (43)

The prevalence of malnutrition and low intake of fluids in patients who were either dehydrated or normohydrated are presented in table 2. Kappa values varied around 0 and reflected low agreement.

Table 2:	Normohy.	Dehydr.	P-value
NRS 2002≥3, n (%)	48 (81.4)	32 (69.6)	0,174
MNA-SF≤7, n (%)	13 (23.2)	9 (23.1)	1,000
MNA-LF<17, n (%)	16 (30.2)	13 (37.1)	0,644
MUST≥2, n (%)	22 (33.8)	12 (24.5)	0,308
GLIM (NRS 2002), n (%)	35 (74.5)	27 (84.4)	0,405
GLIM (MNA-LF), n (%)	34 (75.6)	20 (74.1)	0,438
Low intake of fluids, n (%)	36 (76.6)	27 (84.4)	0,570

Figure 1 and 2 visualizes the overlap between dehydration and malnutrition assessed by GLIM including an initial nutritional screening with respectively NRS-2022 and MNA-LF in a Venn-diagram

Figure 1: The overlap between GLIM after screening with NRS-2002 and dehydration (n)

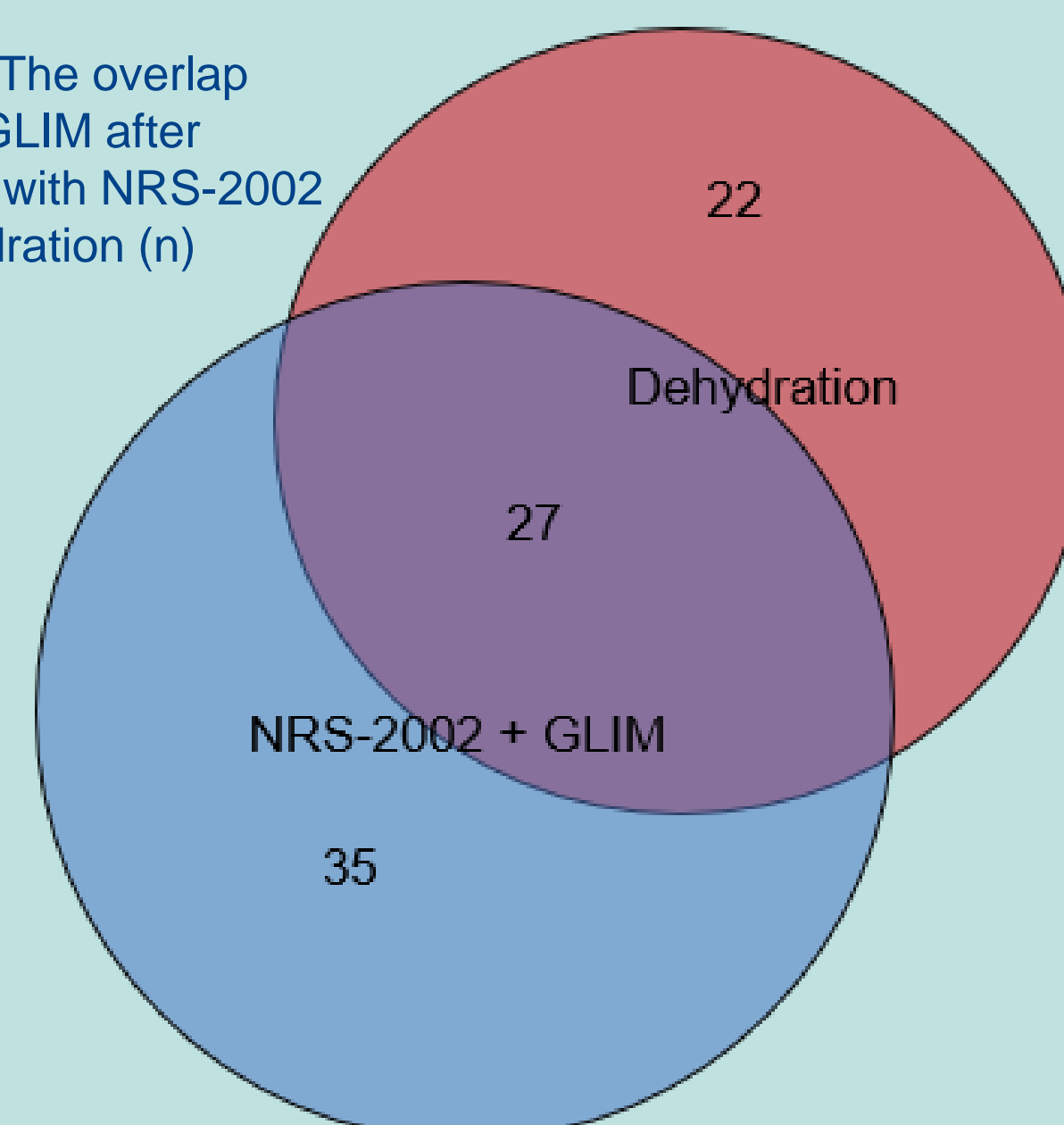
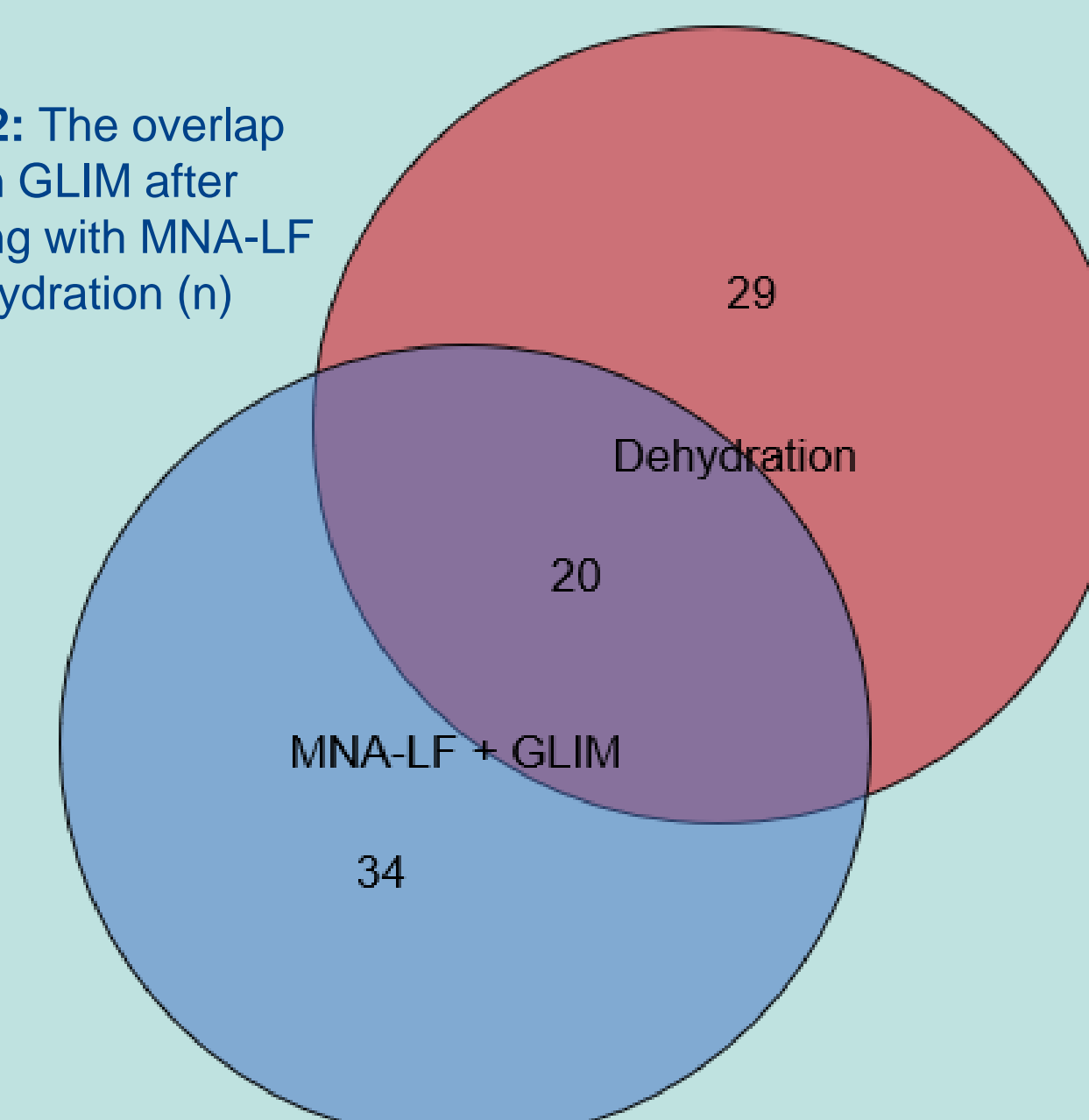


Figure 2: The overlap between GLIM after screening with MNA-LF and dehydration (n)



#### CONCLUSIONS

We found low agreement between low-intake dehydration and malnutrition in a population of geriatric patients. All geriatric patients should therefore be assessed for both condition during hospitalization

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#### CONTACT INFORMATION

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