

Non-specific complaints: A dangerously underrated entity?

Birrenbach T¹, Huser A¹, Exadaktylos AK¹, Hautz WE¹, Sauter TC¹, Müller M^{1,2}

¹ Department of Emergency Medicine, Inselspital, University Hospital, University of Bern, Bern, Switzerland; ² Institute of Health Economics and Clinical Epidemiology; University Hospital of Cologne, Cologne, Germany

Background and Study Aim

- Patients presenting with **non-specific complaints (NSC)**, such as generalised weakness, or just feeling unwell, constitute about **20% of emergency care consultations**
- In contrast to patients presenting with specific symptoms, NSC patients are **hospitalized more than three times as often**, have a **35% longer length of stay in hospital**, and suffer from a **mortality rate twice as high** for unknown reasons (1,2)
- One possible explanation for these differences could be based on the diagnostic process in the ED; thus, we analysed and compared the diagnostic resource consumption at the ED of this vulnerable patient group

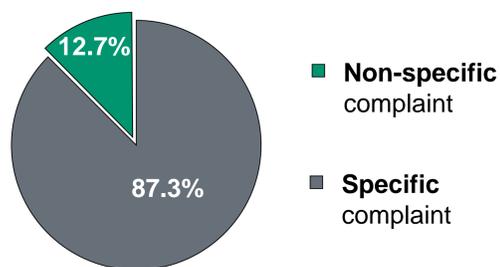


Methods

- Retrospective analysis of 1'500 randomly selected medical consultations triaged as urgent to high urgent from our electronic health record database at the ED of a tertiary care hospital affiliated to a Swiss University
- Sample size was calculated to detect a difference of at least 20% in the geometric mean of the total diagnostic ED resources (Specific vs. NSC)
- NSC were defined according to a predefined scheme (3) and assessed by 2 independent raters
- *Patient and encounter characteristics, patient outcome data, as well as study outcome data* (physician and nursing, material and medication, laboratory, and radiological resources as well as total diagnostic resource consumption) were collected
- Univariable and multivariable regression analysis were performed in order to assess the impact of NSC on the utilisation of diagnostic resources

Results

Incidence of NSC



Backward selection model including all potential predictor variables (p<0.2)

	GMR	95% CI	p-value
Type of complaint			
Specific	1.00	(baseline)	
Non-specific	0.91	(0.84 - 0.99)	0.042
Chronic patient characteristics			
Age, per year	1.00	(1.00 - 1.01)	<0.001
Malignancy	1.16	(1.07 - 1.26)	<0.001
Cerebrovascular disease	1.16	(1.04 - 1.31)	0.011
Liver disease	1.13	(1.01 - 1.27)	0.032
Diabetes	0.88	(0.76 - 1.03)	0.107
Past myocardial infarction	0.92	(0.84 - 1.02)	0.115
Drug intake			
On any antihypertensive	1.08	(1.00 - 1.17)	0.047
On any antithrombotic	1.09	(1.00 - 1.19)	0.046
On any antidiabetic	1.15	(0.97 - 1.37)	0.114
Acute patient characteristic			
Triage, high urgent	1.24	(1.17 - 1.32)	<0.001
Contextual characteristics			
Night admission	0.84	(0.79 - 0.89)	<0.001
Effective weekends	0.95	(0.9 - 1.01)	0.128

Predictors with p<0.05 are highlighted in bold
GMR: geometric mean ratio

Resource distribution for patients with NSC



Median **physician resource utilization** of ED consultations of NSC patients was **+12%** (p=0.048) higher compared to ED consultations of patients presenting with a specific complaint



Utilisation of **medication and materials** (-23%, p<0.001), **radiology** (-54%, p=0.001), as well as **laboratory** (-12%, p=0.036) was found to be significantly less in ED patients presenting with a NSC

Illustrations obtained from: <https://www.freepik.com>

Conclusion

- Non-specific complaints (NSC) are a frequent reason for emergency medicine consultations and are associated with **lower utilisation of diagnostic resources during ED diagnostic testing** compared to those with specific complaints
- A detailed comparison of the apportionment of resource utilisation, showed that the total amount of **physician resources** (mainly in direct patient consultation and administrative tasks) spent was actually **significantly higher for patients with NSC** than those presenting with a specific complaint; in contrary, material and medication, laboratory and radiology resources were less utilised in patients with NSC
- The reasons for this unexpected result are unclear. It remains to be elucidated whether the outcome of patients with NSC would be improved by investing more ED resources

References

- [1] Sauter TC, Capaldo G, Hoffmann M, Birrenbach T, Hautz SC, Kammer JE, et al. Non-specific complaints at emergency department presentation result in unclear diagnoses and lengthened hospitalization: a prospective observational study. *Scand J Trauma Resusc Emerg Med.* 2018;26(1):60
- [2] Kemp K, Mertanen R, Laaperi M, Niemi-Murola L, Lehtonen L, Castren M. Nonspecific complaints in the emergency department - a systematic review. *Scand J Trauma Resusc Emerg Med.* 2020;28(1):6
- [3] Nemeč M, Koller MT, Nickel CH, et al. Patients presenting to the emergency department with non-specific complaints: the Basel Non-specific Complaints (BANC) study. *Acad Emerg Med.* 2010;17(3):284-92