Introduction:
Dysphagia is common and independently predicts death in ICU patients. Risk factors for dysphagia are largely unknown with sparse data available only from mostly small cohorts without systematic dysphagia screening. We investigated risk factors for dysphagia in ICU patients post invasive mechanical ventilation.

Methods:
Post-hoc analysis of data from a large monocentric prospective observational study (“Dysphagia in mechanically ventilated ICU patients, DYnAMICS”) using comprehensive statistical models to identify potential risk factors for dysphagia in 933 primary ICU admissions. In DYnAMICS, patients were systematically screened for dysphagia at the bedside within 3 hours from extubation using the two-step Bernese ICU Dysphagia Algorithm. Screening-positivity was followed within 24 hours by a confirmatory exam, identifying 116 ICU patients suffering from dysphagia.

Results:
After adjustment for typical confounders, baseline neurological disease (OR 4.45, 95%-CI: 2.74-7.24, p<0.01), emergency admission (OR 2.04, 95%-CI: 1.15-3.59, p<0.01), days on mechanical ventilation (OR 1.19, 95%-CI: 1.06-1.34, p<0.01), days on renal replacement therapy (OR 1.1, 95%-CI: 1.00-1.23, p=0.03), and disease severity (APACHE II score within first 24 hours; OR 1.03, 95%-CI: 0.99-1.07, p<0.01) remained independent risk factors for dysphagia post mechanical ventilation. Increased Body Mass Index reduced the risk for dysphagia (6% per step increase, OR 0.94, 95%-CI: 0.90-0.99, p=0.03).

Conclusion:
In ICU patients, baseline neurological disease, emergency admission and duration of invasive mechanical ventilation appeared as prominent independent risk factors for dysphagia. Although screening for dysphagia should be performed in all ICU patients, a risk-based screening approach might be implemented whenever screening of the total ICU population is not deemed feasible.

References:
dose and APACHE II score. PCs 1 to 4 (A-C) are shown on horizontal and vertical axes. Based on PC 1 to 3 (explaining 70.25% of the variance), three groups of swappable variables were identified: (1) days on RRT, days in hospital and cumulative Midazolam dose, (2) days in ICU, days on gastric tube, days on invasive mechanical ventilation and cumulative Propofol dose and (3) APACHE II score. The first member of each group was selected as representative variable.