

# Death and pneumonia incidence in relation to dysphagia severity

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## Aim

The study aimed to analyze death and pneumonia rates and length of hospital stay (LOS) in relation to dysphagia severity determined by fiberoptic endoscopic evaluation of swallowing (FEES) in a group of acute stroke patients.

## Methods

The incidence of inhospital death and pneumonia and LOS was retrospectively analyzed in a group of 71 acute stroke patients who underwent fiberoptic endoscopic evaluation of swallowing (FEES). Pneumonia was considered when radiological and/or clinical signs were confirmed in the medical data.

The endoscopic assessment of dysphagia was conducted according to the protocol proposed by Dziewas et al. for acute stroke patients [1] and dysphagia severity was classified according to the Fiberoptic Endoscopic Dysphagia Severity Scale (FEDSS).

FEDSS 6 penetration or aspiration of saliva  
FEDSS 5 penetration/aspiration of semisolid food without sufficient protective reflexes  
FEDSS 4 penetration/aspiration of semisolid food with sufficient protective reflexes or penetration/aspiration of water without sufficient protective reflexes  
FEDSS 3 penetration/aspiration of water with sufficient protective reflexes  
FEDSS 2 penetration or aspiration of solid food or marked residue in valleculae or pyriforms  
FEDSS 1 no penetration/aspiration or residue with solid food

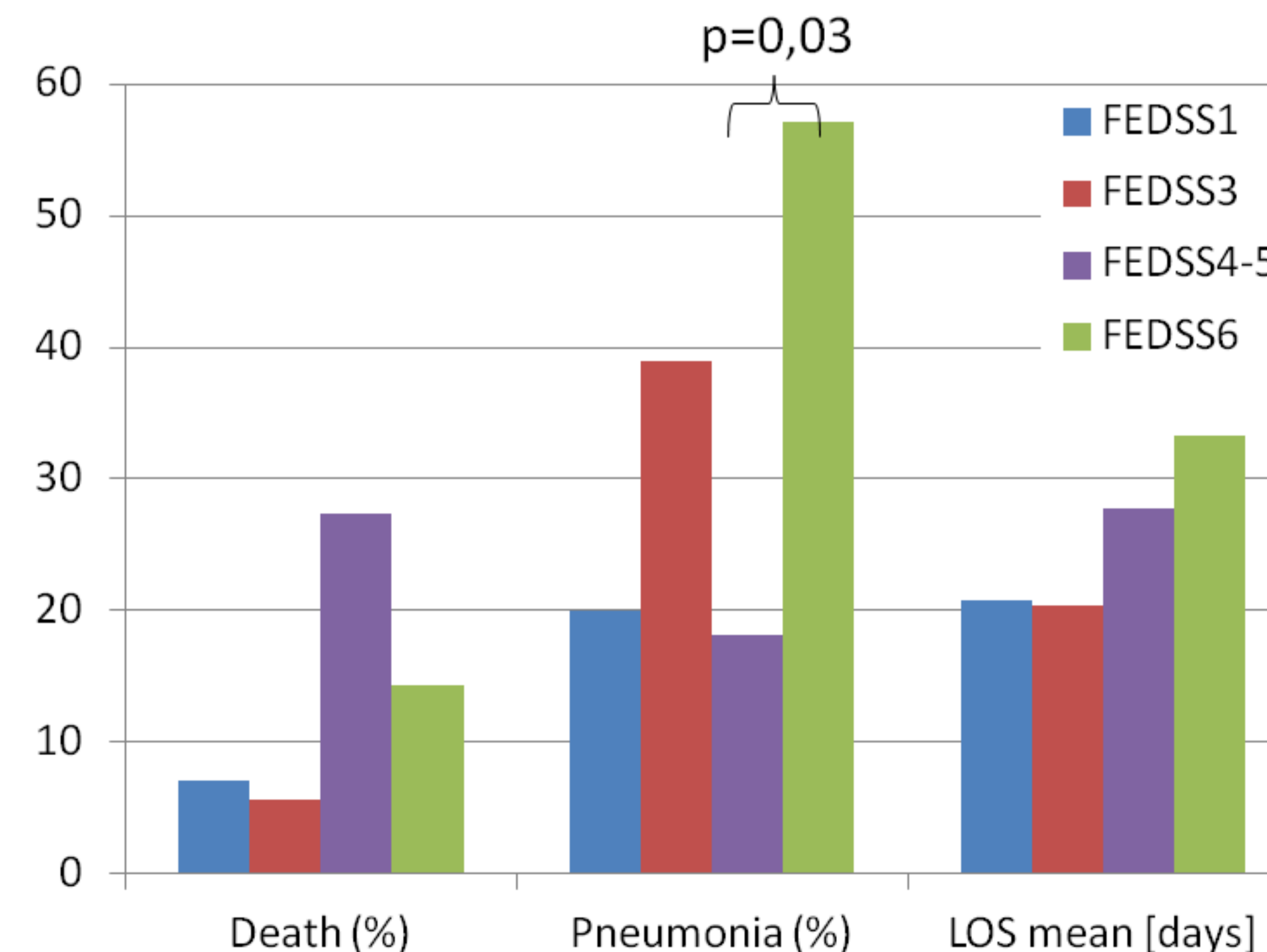
## Results

71 patients (35 F/36 M), mean NIHSS 12,4(SD 6,3) points, mean age 75,7(SD 12,9) years underwent FEES examination during acute stroke phase. The incidence of death was 12,7% and of pneumonia - 39,4. The mean LOS was 26,7 (SD22,6) days.

There was a following distribution of dysphagia severity in the group:

FEDSS 6 n=28,  
FEDSS 5 n=4,  
FEDSS 4 n=7,  
FEDSS 3 n=18,  
FEDSS 2 n=0,  
FEDSS 1 n=14

The groups FEDSS-4 and 5 were pooled together for the analysis



## Conclusions

Acute stroke patients with most severe dysphagia were significantly more likely to develop aspiration pneumonia.

There was a tendency to increased mortality and longer hospital stays in patients with increasing severity of dysphagia but differences did not meet statistical significance.

## References

Dziewas R, Warnecke T, Olenberg S, Teismann I, Zimmermann J, Kramer C, et al. Towards a basic endoscopic assessment of swallowing in acute stroke - development and evaluation of a simple dysphagia score. Cerebrovasc Dis 2008;26(1):41-7.