Topic: **Onderste extremiteit**
Presentation preference: **Orale presentatie**

1-year mortality of the anterior approach compared to other approaches in elderly hip fracture patients treated with hemiarthroplasty: a national registry study

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Introduction

While the direct anterior approach (DAA) has shown advantages in total hip arthroplasty (THA), its potential benefits in hemiarthroplasty (HA) for elderly patients presenting with femoral neck fractures (FNF) remain unclear. This study investigates whether the DAA reduces 1-year mortality compared to conventional surgical approaches for HHA.

Method

This registry based target trial emulation included FNF patients aged ?75 years undergoing HA (2007 - 2021). Using propensity score matching arms were created based on approach: DAA, posterolateral (PLA), anterolateral (ALA), and straight lateral (SLA). The primary outcome was 1-year mortality. Secondary outcome was the prevalence of the analyzed surgical approaches over time. Statistical analyses were done with Cox proportional hazard models and illustrated by Kaplan Meier survival curves.

Results

40,981 eligible patients were included. In this population, the proportion of DAA increased from 0% in 2007 to 13% in 2020. After confounder adjustment, 23,770 patients were successfully matched. One-year mortality rates were comparable across approaches: 26% (DAA), 26% (PLA), 24% (SLA), and 27% (ALA). Cox proportional hazard models showed no significant differences in survival between approaches.

Conclusion

This study found no significant differences in 1-year mortality between the DAA and conventional surgical approaches for HA in elderly FNF patients. Acknowledged DAA advantages in THA did not translate into reduced mortality for HA. Further research is required to explore other clinical outcomes which might substantiate the DAA's potential benefit in this fragile population.