

Longitudinal Urban Cohort Ageing Study

Funding: Bundesministerium für Bildung und Forschung (BMBF)
(Federal Ministry of Education and Research)

BMBF Förderkennzeichen LUCAS-Verbund 01ET0708-12
Albertinen-Haus Hamburg (01ET0708)

Summary of the first funding period 01 October 2007 – 31 December 2010

Subproject 6: In-hospital falls and relation to drug use (FALLEN)

Background: Falls are among frequent adverse events in older hospital in-patients. Apart from causing pain, distress, injuries, post-fall syndrome, and poor outcome, falls do substantially contribute to prolonged length of hospital stay and excessive use of resources. However, information on and results from fall prevention in hospitals are still limited compared to fall-preventive programs in community-dwelling elderly people and long-term care institutions.

Aims: LUCAS Subproject 6 aimed to improve in-hospital fall-prevention by (a) optimising identification of patients at high risk of falling and b) evaluating and reducing fall-risk increasing drugs.

Methods: Therefore, retrospective analyses of STRATIFY fall-risk assessment and its risk factors were performed by using routine clinical data. The dataset was divided into a training- and a validation-dataset. Relevant interactions were identified by means of a classification and regression tree (CART-model). Logistic regression was used to validate and refine the model. A retrospective case-control study (n=200) was carried out to identify fall-risk increasing drugs. In addition, investigations on orthostatic hypotension and gait analyses were performed.

Results: The STRATIFY fall-risk assessment did not sufficiently predict high-risk patients. A new LUCAS fall-risk assessment was developed. The analysis of medication identified especially antidepressants as fall-risk increasing drugs. Falls were also associated with the German list of Potentially Inappropriate Medication (PIM).

Conclusion: The aim is to further improve the prevention of in-hospital falls in older in-patients by reduction of potentially inappropriate medication through PIM-alert and by optimising the identification of patients at high risk of falling.

Longitudinal Urban Cohort Ageing Study

Funding: Bundesministerium für Bildung und Forschung (BMBF)
(Federal Ministry of Education and Research)

BMBF Förderkennzeichen LUCAS-Verbund 01ET1002A-D
Albertinen-Haus Hamburg (01ET1002A)

Summary of the second funding period 01 January 2011 – 31 March 2014

Subproject 6: Potentially inappropriate medication (PIM) and in-hospital falls

The aim of LUCAS II TP 6 was to improve patient safety through prevention of older patients' falls in hospital. There were 3 parts: 1. a case-control study to evaluate associations between PIM (potential inadequate medication) and falls (adverse event); an intervention study (PIM-Alert), 2. prospective validation of the LUCAS fall-risk screening as developed in LUCAS I; a comparison of in-hospital fall prevention based on formalised risk screening versus prevention based on nurses' judgment of fall risk alone; 3. to establish and to edit the first issues of a new book series to serve education in gerontology and geriatrics with relevance to health-care service provision (co-operation research consortium AMA and LUCAS).

Results: 1.) PIM was significantly related to recurrent falls. Significant relations were found for medications from the PRISCUS list (high fall risk): Tetrazepam, Zopiclone und Lorazepam. On patients' admission, there were 7.1% PIM out of a total of 27,259 prescriptions, 2.9% at discharge. The number of patients with PIM was significantly reduced on the intervention as well as on the control ward. The patients who refused to take part in the study were more often at high risk of falling. 2.) Systematic in-hospital fall prevention based on the LUCAS fall-risk screening was followed by a significant reduction of fallers, 12.5% vs.14.5% as expected. Prevention based on formalised fall-risk screening is significantly more effective than prevention based on nurses' judgment alone. 3.) Two prototypes for the series „Praxiswissen Gerontologie und Geriatrie kompakt“ were produced and published in 2013; publisher: de Gruyter („Arzneimittel im Alter“ und „Schmerz im Alter“), issue 3 „Pflegetbedürftigkeit im Alter“ was published in 2014, the issue 5 „Ernährung im Alter“ is under press.

The results can help to improve patient safety in older in-patients. The project's results were provided to contribute to the activities of the „Aktionsbündnis Patientensicherheit“, the LUCAS fall-risk screening can be found on the European platform of the European Union Network for Patient Safety and Quality of Care, an example of good clinical practice from Germany.