Editorial

Hip Fracture in the Elderly: Time to Act

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Editorial to accompany the article:

"The Association Between Orthogeriatric Co-management and Mortality Following Hip Fracture: An Observational Study of 58 000 Patients from 828 Hospitals" by Kilian Rapp et al.

in this issue of *Deutsches Ärzteblatt International*

The World Health Organization (WHO) plans to declare the period 2020–2030 as the "Decade of Healthy Aging." This is intended to focus attention on the global challenge posed by the progressive aging of the world population. This edition of *Deutsches Ärzteblatt* provides an excellent analysis of a central topic of the aging society in Germany (1). The adequate care of elderly patients with femoral neck fractures is extremely important, since these injuries are associated with high mortality, high loss of independence, and high financial costs for the community of mutual solidarity. Around 120 000 proximal femoral fractures were treated surgically on an inpatient basis in Germany in 2018 (2). The general mortality rate following procedures of this kind is 10–15% within the first 30 days and 25–30% at 6 months. The excess mortality due to hip fractures is 8–36% at 12 months (1).

Global call to action

The first ever global "Call to Action" was recently issued, aimed at improving the care of individuals with fragility fractures (3). Improvements in the following three key areas are called for: multidisciplinary orthogeriatric acute care, post-acute rehabilitation, and secondary prevention.

Many elderly patients with fractures have pre-existing chronic diseases, which affect not only the overall treatment situation, but also their long-term and short-term survival as well as their functional recovery. Preventing complications and, in particular, minimizing the risk of delirium are treatment priorities. Adequate pain therapy, achieving fitness for surgery in the short-term, and prompt, skilled surgical treatment are of central importance. For this reason, close collaboration between orthopedists, trauma surgeons, as well as geriatricians is highly recommended in the acute phase (4).

A large number of patients fail to achieve the same functional capacity following a fracture as before and, as a result, lose their independence. There is much evidence that long-term multi-professional rehabilitation programs are able to considerably improve patients' ability to resume active participation in everyday life (5). Individuals that have suffered fragility fractures have a significantly higher risk of sustaining further fractures. Although the preventive effectiveness of pharmacological and non-pharmacological interventions has been unequivocally demonstrated,

80% of fracture patients are currently remaining undiagnosed and untreated for the underlying disease (6).

Structure and process optimization

The implementation of a treatment pathway (for example, a fracture liaison service) has led to significantly better care in other countries (7). An interdisciplinary guideline on the treatment of people with fragility fractures is now also available on a European level (8).

Great Britain started early on to work towards improving the quality of its care by optimizing structures and processes. To this end, a binding national interdisciplinary guideline was implemented, a registry was initiated (National Hip Fracture Database), and financial incentives set up with the best practice tariff (BPT; a bonus of 1355 British pounds for every patient treated in accordance with the guideline). The BPT in particular, which is guided by structural and outcome criteria, appears to be the most significant measure according to the available registry data on the reduction in 30-day mortality (9).

In Germany, the orthopedic/trauma surgery, geriatric, and osteological specialist medical societies have initiated a number of relevant measures in recent years: for example, the white paper on "Geriatric Traumatology" ("*Weissbuch Alterstraumatologie*") was jointly published by the German Societies for Trauma Surgery (*Deutsche Gesellschaft für Unfallchirurgie*, DGU) and Geriatrics (*Deutsche Gesellschaft für Geriatrie*, DGG) (10). The paper highlights the most important steps in the optimal care of elderly patients with bone fractures in a multi-professional team. Furthermore, interdisciplinary centers can become certified (on a voluntary basis) as either a "Geriatric Trauma Center DGU" or a "Geriatric Traumatology Center DGG." Participation in the DGU Geriatric Trauma Registry is mandatory in order to become a Geriatric Trauma Center and serves quality assurance and outcome analysis purposes (11).

Intensive multidisciplinary care

The authors of the study discussed here (1) carried out a differentiated analysis of administrative data from the AOK and stratified these on the basis of accounting data according to the German procedure

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classification (*Operationen- und Prozedurenschlüssel*, OPS 8–550; early complex geriatric rehabilitation) as submitted by one hospital. The study showed that the implementation of orthogeriatric co-management (OGCM), or rather, the application of the multimodal OPS 8–550, achieved a 22% reduction in 30-day mortality—and in absolute terms, 30 deaths in 1000 hip fractures could be prevented. This impressive outcome underscores the absolute necessity for interdisciplinary management.

The duration of acute inpatient treatment was significantly longer in patients receiving orthogeriatric care (19.8 versus 14.4 days) compared to patients that did not receive this type of care, whereas the overall treatment duration, including rehabilitation, differed only marginally (41.4 versus 39.3 days). The group appears to be comparatively heterogeneous: OGCM conferred no detectable benefit in around a quarter of the study population, the highly care-dependent patients from nursing homes. In contrast, only 27% (OGCM) and 37% (no OGCM) required inpatient rehabilitation; the remaining patients returned to their nursing home after just under 3 weeks (25%) or were able to care for themselves again.

The analysis did not take into consideration the effect of non-fatal effects, such as a potential new-onset need for care, an increase in the level of care required, or worsened functional capacity. The 2017 BARMER Hospital Report revealed that patients that underwent complex geriatric treatment had a 6.9 percentage point higher probability of requiring long-term care following a hip fracture compared to discipline-specific rehabilitation, after adjustment for observable patient differences. In addition, the likelihood of an increase in care level was 4.9 percentage points higher compared to that in patients that underwent rehabilitative treatment. However, there were no statistically significant differences between the two types of treatment in terms of the probability of being admitted to a nursing home or of dying.

Based on the current study and the international literature, it would appear absolutely essential to make intensive multidisciplinary care available to patients at the time of admission and acute management. It would also seem advisable to improve the rigid stipulations of the DRG (diagnosis-related groups) system, which are based exclusively on structural criteria, and to be guided by the experience gained in other countries with a combination of structural and outcome criteria. An investigation into which of these patients profit in the course of further early geriatric rehabilitation or discipline-specific orthopedic rehabilitation is desirable.

In order to be able to deploy an adequate number of physicians with expertise in geriatric medicine, it is important to introduce a certificate of additional qualification in geriatrics. However, one should bear

in mind here that there may be different treatment focuses; therefore, access to this type of continued medical education should be kept open to all relevant clinical specialties in order to be able to combine specialist medical skills with skills in geriatrics.

The two other key areas in the “Call for Action”—post-acute rehabilitation and secondary prevention—have received only limited attention to date. Timely optimization would be appropriate in the “Decade of Healthy Aging.”

Conflict of interests

Prof. Dreinhöfer is chairman of the Global Alliance for Musculoskeletal Conditions, Secretary of the Global Rehabilitation Alliance, and Past President of the Fragility Fracture Networks. He received lecture fees from Amgen and Zimmer Biomet.

Translated from the original German by Christine Rye.

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Cite this as

Dreinhöfer K: Hip fracture in older people—time to act. *Dtsch Arztebl Int* 2020; 117: 51–2. DOI: 10.3238/arztebl.2020.0051