Risk of hip fractures in diabetic patients over 50 years old according to diabetes duration: a Korean national cohort study

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Introduction

- Diabetic patients are well known to have a high risk of hip fractures; however, studies regarding the association between diabetes duration including impaired fasting glucose (IFG) and hip fracture risk are lacking.

- Using a National Health Insurance Service (NHIS) database in the Republic of Korea, this study aimed to investigate risks of hip fractures in diabetic patients aged ≥ 50 years according to diabetes duration level including IFG and to compare the risks with those in non-diabetes individuals.

Materials and methods

- In this national cohort study, population data registered between 2009 and 2010 were extracted from the general screening database of NHIS.

- Relative risks of hip fractures were evaluated until December 31, 2016, according to diabetes duration levels: normal, IFG, newly diagnosed diabetes mellitus (new DM), DM duration < 5 years, and DM ≥ 5 years.

- Subgroup analyses according to age (50-64, 65-74, and ≥75) and sex were also performed.

Results

The relative risk of hip Fx.
- 1.03 (1.01-1.06) in IFG
- 1.17 (1.11-1.23) in new DM
- 1.54 (1.50-1.60) in DM < 5 yrs
- 2.10 (2.05-2.16) in DM ≥ 5 yrs

- The risks of hip fractures increased significantly according to the DM level in both male and female.

- Analysis by age showed that risks of hip fractures increased significantly according to the DM level in all age groups, and increasing trend was more predominant in younger patients.

Discussion and conclusion

- This study confirmed that risks of hip fractures gradually increase according to the DM duration regardless of sex and age group.

- Our findings suggest the monitoring and management of IFG patients are needed, as they have a higher risk of hip fractures even at the IFG level. Fracture prevention strategies are needed from the early stage of DM including patients at the IFG level.