

# Sacral Insufficiency Fracture associated with Osteoporotic Spinal Compression Fracture

## - Analysis and Incidence and Related Factors -

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### INTRODUCTION

Sacral insufficiency fracture is known as a common cause of back pain developed without evident trauma in patients with osteoporotic spinal compression fracture(OSCF). The purpose of present study was to investigate the incidence and predisposing factors of sacral insufficiency fractures(SIF) accompanied by osteoporotic spinal compression fracture.

### MATERIALS AND METHODS

➢ Jan. 2008 ~ Dec. 2012

➢ 949 patients with osteoporosis

- Spinal compression fracture in MRI
- Exclusion
  - trauma, infection, cancer, pathologic fracture

➢ 80 male, 869 female

➢ Mean age: 65.8 yrs (39~98)

#### Bone Mineral Densitometry

➢ T-score

- Lumbar spine(except fractured vertebrae)
- Both hip

#### Diagnosis of Sacral insufficiency fracture

➢ MRI sagittal image

- Marrow edema
- STIR (Short Tau Inversion Recovery)

➢ Whole body bone scan

- 'H' shape (Honda sign)

#### Predisposing factors

➢ Sex, Age

➢ Body Mass Index (BMI)

➢ Underlying disease

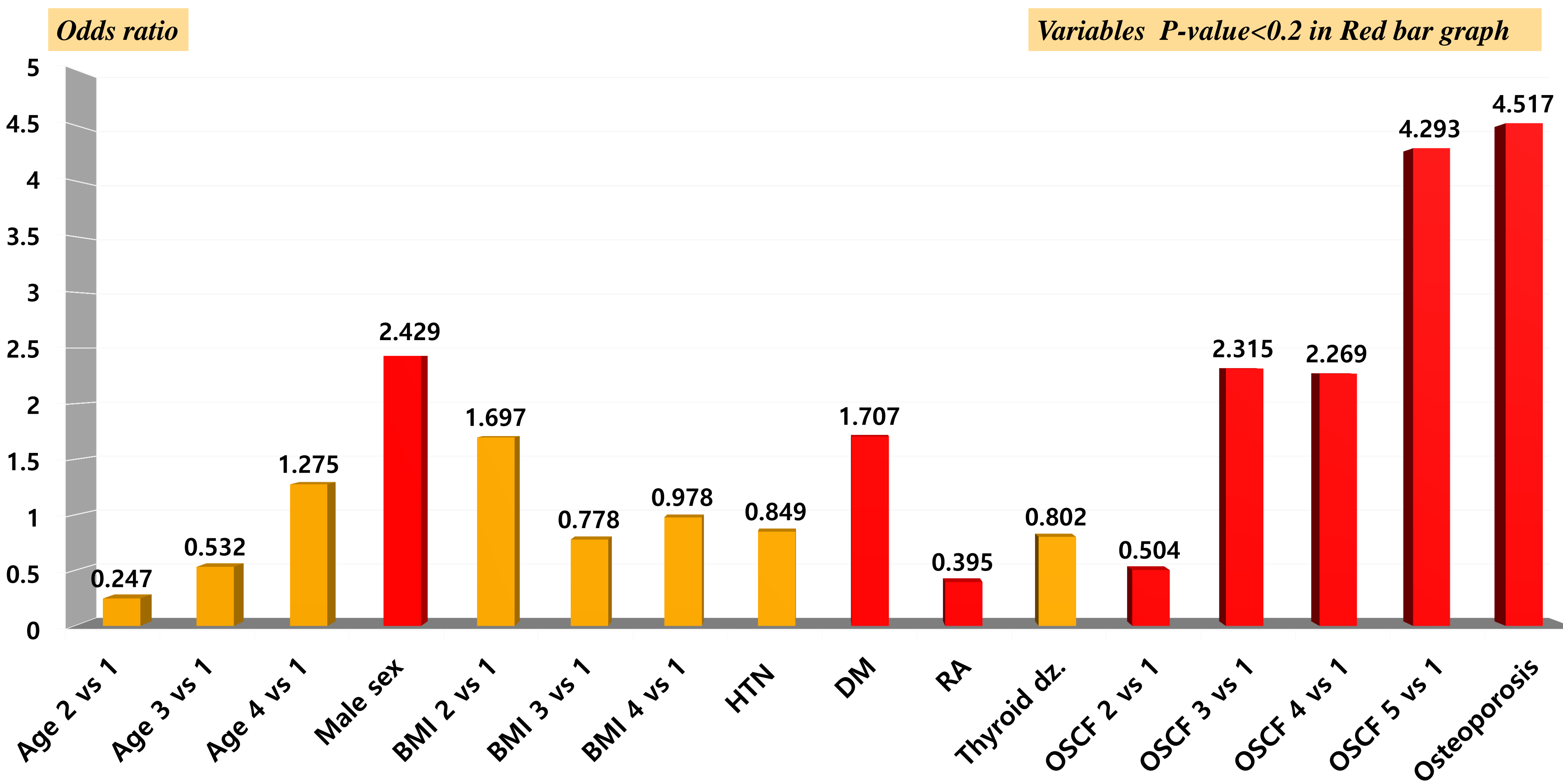
➢ HTN, DM, RA, thyroid disease

➢ Number of osteoporotic spinal compression fracture

➢ Presence of Osteoporosis

### RESULTS

#### Results of Simple Logistic Regression Analysis

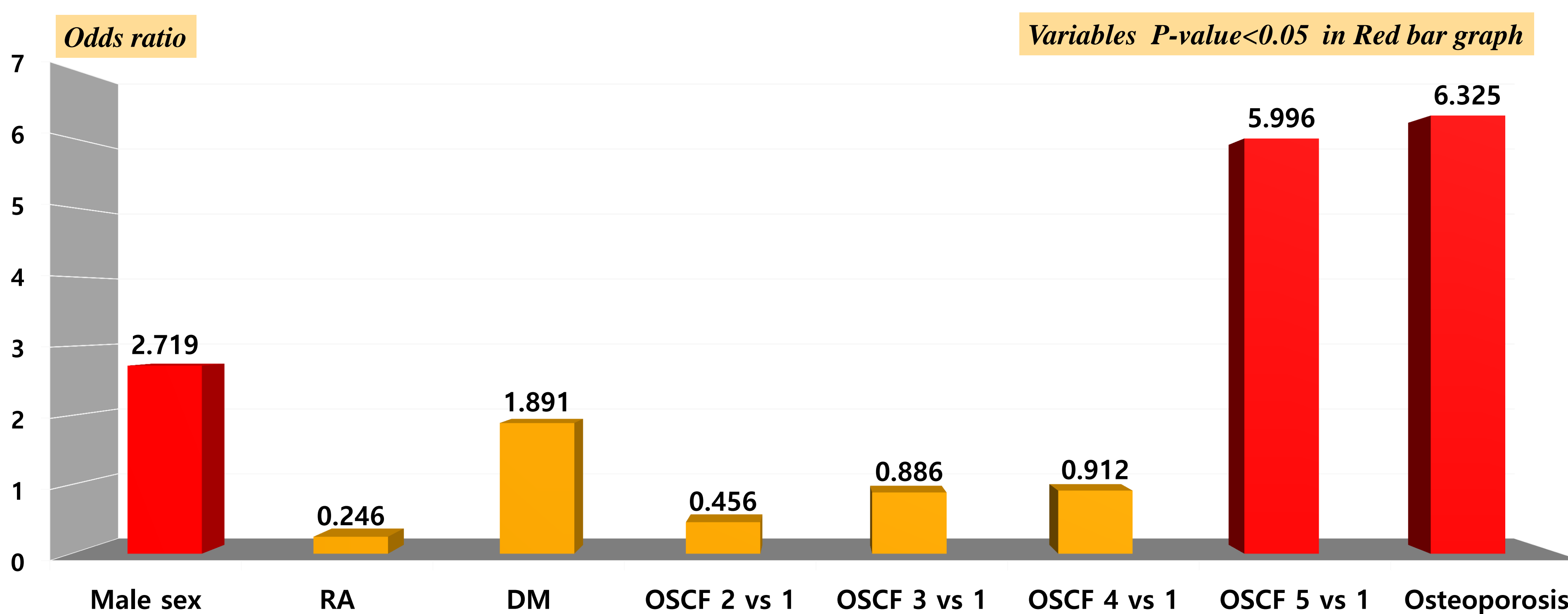


#### Variables define

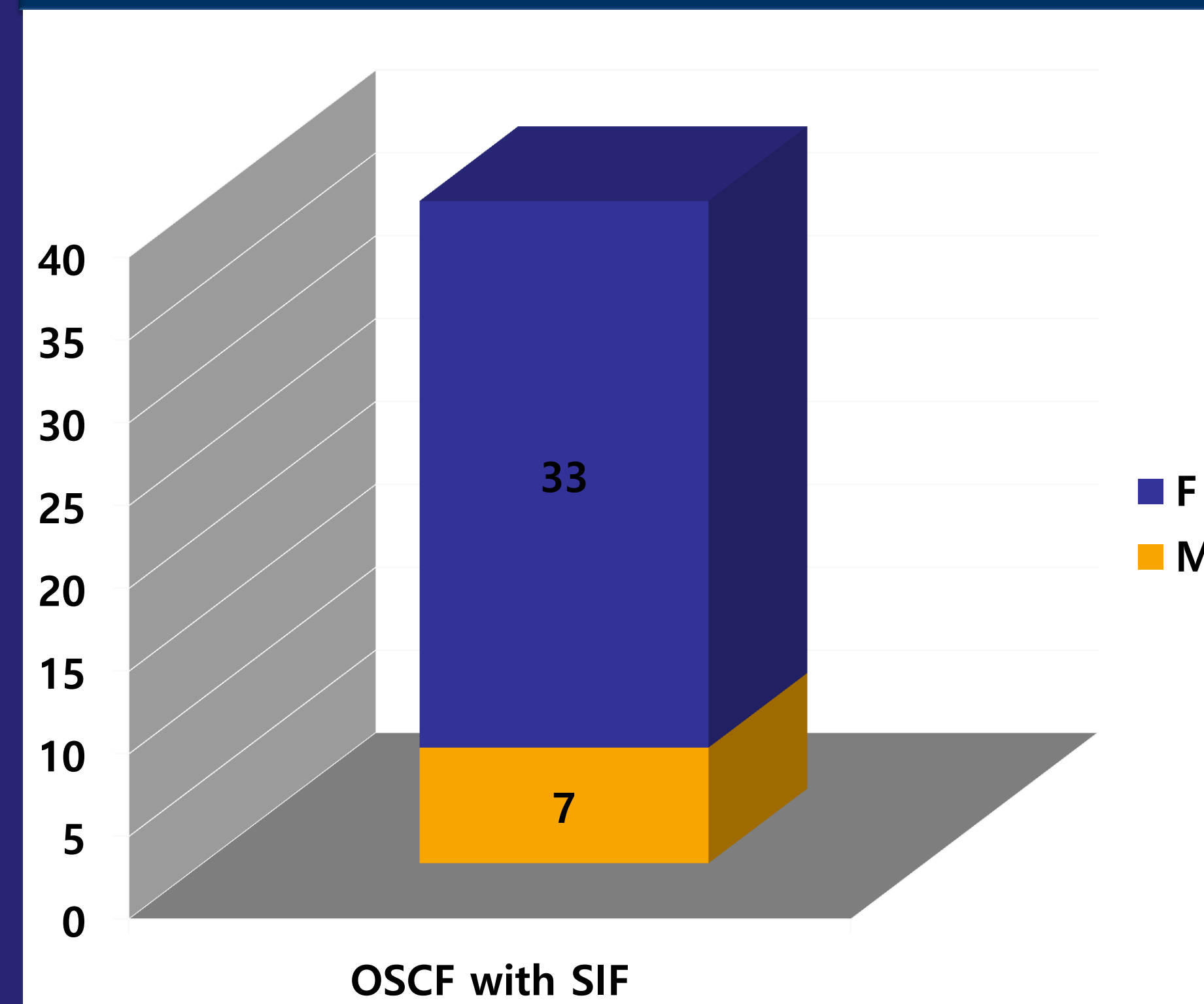
Variable	Category	Range
Age	1	Age < 40
	2	40 ≤ Age < 50
	3	50 ≤ Age < 60
	4	60 ≤ Age
BMI	1	BMI < 21.4
	2	21.4 ≤ BMI < 23.78
	3	23.78 ≤ BMI < 26.13
	4	26.13 < BMI
Number of OSCF	1	Number = 1
	2	Number = 2
	3	Number = 3
	4	Number = 4
	5	Number ≥ 5

Among 9 related factors, p-value of 5 factors(Sex, DM, RA, OSCF, osteoporosis) are < 0.2 in simple logistic regression analysis

#### Results of Stepwise Multiple Logistic Regression Analysis



#### Incidence of SIF



Sex, OSCF, Osteoporosis are chosen finally in multiple logistic regression analysis

40/949 = 4.2%

### CONCLUSION

Sacral insufficiency fracture should be assessed carefully, considering the sex, number of osteoporotic spinal compression fracture, the presence of osteoporosis.

Conflict of Interest : None