Comorbidities in elderly patients with Oral Corticosteroid-Dependent Asthma in South Korea

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INTRODUCTION

- Oral corticosteroid (OCS) has a significant therapeutic impact in various disease area and is frequently used to treat respiratory disorders including asthma. However, it also carries the risk of negative side effects especially in elderly patients.
- To examine the adverse effects of OCS on elderly asthma patients in South Korea, we estimated the prevalence and odds of potential OCS-related comorbidities in OCS-dependent asthma patients compared with patients who did not use OCS.
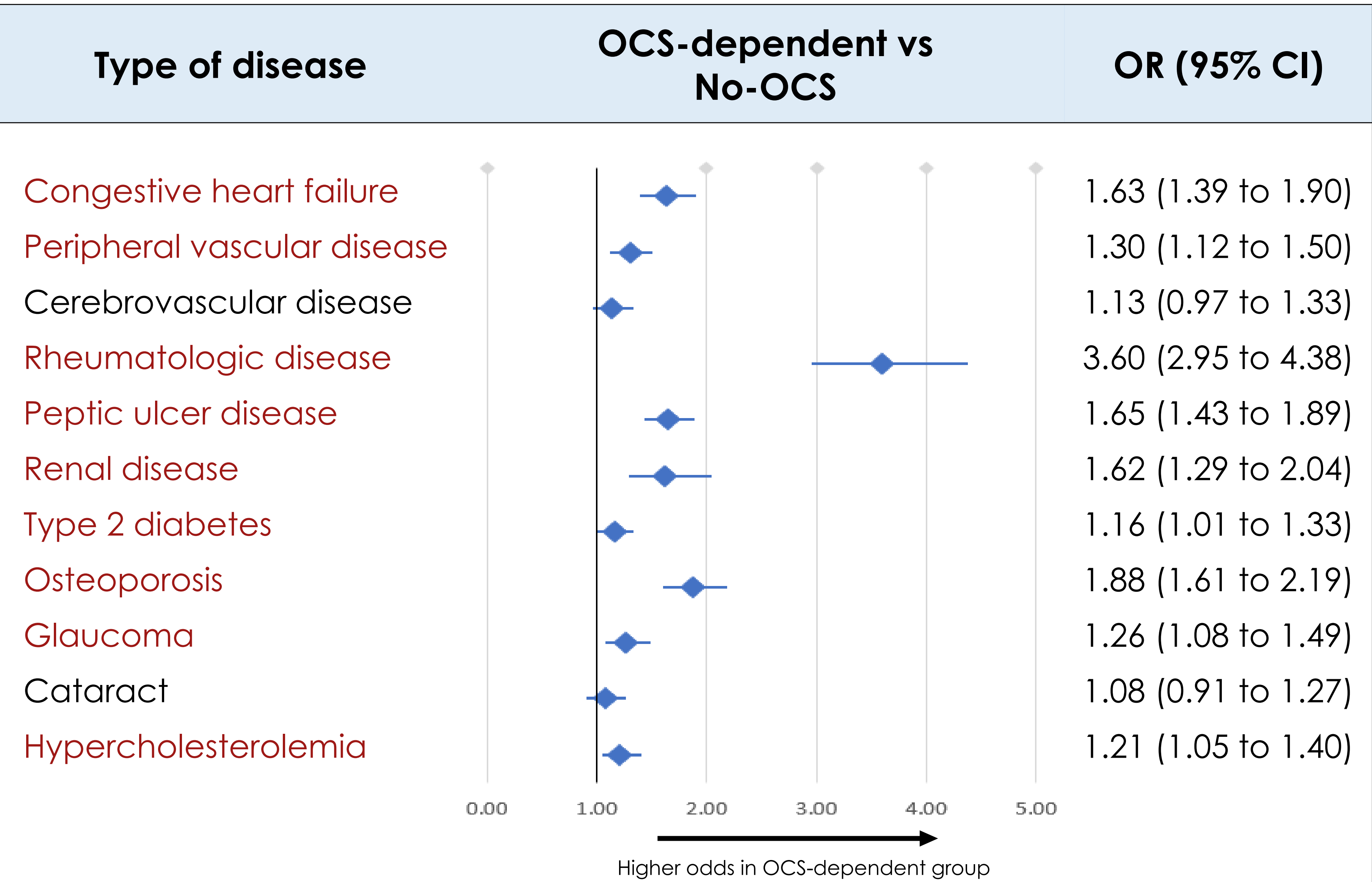
METHODS

- **Data source**
  - The Health Insurance Review and Assessment Service-National Patient Sample (HIRA-NPS) 2020.
- **Study population**
  - OCS-dependent asthma patients (aged ≥ 60 years) were defined as satisfying all following criteria:
  1) ≥1 claim of asthma diagnosis (ICD-10: J45-46);
  2) ≥5 mg/day prednisolone equivalents use for ≥90 days
  - No-OCS asthma patients (aged ≥ 60 years):
  1) ≥1 claim of asthma diagnosis and having no prescription record of OCS in 2020
- **Outcomes**
  - We evaluated prevalence rates of potential OCS-related comorbidities for each group.
  - We estimated the odds ratio (OR), 95% confidence interval (CI), and p-value for the OCS-dependent patients relative to no-OCS asthma patients.
- **Statistical analysis**
  - We used binary logistic regression. The independent variable was OCS-dependent status. The dependent variable was the prevalence of each potential comorbid condition and the confounding variables were gender.

RESULTS

- **Prevalence of potential OCS-related comorbidities**

Type of disease	OCS-dependent (n=898)	No-OCS (n=12,695)
Congestive heart failure	226 (25.2)	2,176 (17.1)
Peripheral vascular disease	286 (31.8)	3,374 (26.6)
Cerebrovascular disease	219 (24.4)	2,799 (22.0)
Rheumatologic disease	141 (15.7)	647 (5.1)
Peptic ulcer disease	367 (40.9)	3,768 (29.7)
Renal disease	93 (10.4)	818 (6.4)
Type 2 diabetes	389 (43.3)	5,019 (39.5)
Osteoporosis	318 (35.4)	3,305 (26.0)
Glaucoma	210 (23.4)	2,480 (19.5)
Cataract	177 (19.7)	2,363 (18.6)
Hypercholesterolemia	292 (32.5)	3,659 (28.8)

- **Association between OCS-dependency and comorbidities**

Type of disease	OCS-dependent vs No-OCS	OR (95% CI)
Congestive heart failure		1.63 (1.39 to 1.90)
Peripheral vascular disease		1.30 (1.12 to 1.50)
Cerebrovascular disease		1.13 (0.97 to 1.33)
Rheumatologic disease		3.60 (2.95 to 4.38)
Peptic ulcer disease		1.65 (1.43 to 1.89)
Renal disease		1.62 (1.29 to 2.04)
Type 2 diabetes		1.16 (1.01 to 1.33)
Osteoporosis		1.88 (1.61 to 2.19)
Glaucoma		1.26 (1.08 to 1.49)
Cataract		1.08 (0.91 to 1.27)
Hypercholesterolemia		1.21 (1.05 to 1.40)

0.00   1.00   2.00   3.00   4.00   5.00

Higher odds in OCS-dependent group

DISCUSSION

- Type 2 diabetes showed the highest prevalence in both OCS-dependent and no-OCS group.
- The odds of congestive heart failure, peripheral vascular disease, rheumatologic disease, peptic ulcer disease, renal disease, type 2 diabetes, osteoporosis, glaucoma and hypercholesterolemia were significantly higher in the OCS-dependent asthma patients in comparison with no-OCS asthma patients.
- Cerebrovascular disease and cataract was not significantly associated with the OCS-dependency.
- There are limitations in that we assessed comorbidities as having one or more related diagnosis codes, only in the year that patients were identified.

CONCLUSION

- OCS-dependent asthma was associated with higher odds of comorbidities in the elderly patients.
- Alternative treatment strategies are needed to reduce the adverse effects of OCS on elderly asthma patients.

ACKNOWLEDGMENT

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