

# COPD Accelerate the eGFR Decreasing Rate in the Chinese Male Old Patients: A Retrospective Cohort Study



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## OBJECTIVES

Chronic obstructive pulmonary disease (COPD) is often associated with adverse prognosis in the age-related systemic abnormalities. The prevalence of COPD and CKD are both high in Chinese male old people, but there are no reports about the relationship of COPD and the changing of eGFR per year in Chinese male old patients. The aim of this study was to investigate the relationship between COPD and the changes of kidney function in the old patients.

## METHODS

- 475 Chinese male patients aged over 70 years, including 120 patients with COPD (group COPD) and 355 patients without COPD (group Non-COPD), were selected to observe from December 2007 to November 2013.
- At the baseline, the two groups were comparable for age, BMI, co-morbidities including chronic kidney disease (CKD), hypertension, diabetes mellitus, coronary atherosclerotic heart disease, and concomitant treatments, including ARB/ACEI,  $\alpha$ -ketoacid, aspirin, clopidogrel, etc.
- All the patients were followed up for 24~60 months.
- The levels of haemoglobin, serum creatinine (SCr), cystatin C (SCys), blood urea nitrogen (BUN), uric acid (Ua), and urine routine analysis were monitored during the follow-up.
- eGFR was calculated by the equation of CKD-EPI<sub>(SCr-SCys)</sub>.
- CKD was defined that the eGFR was less than 60mL/min·1.73m<sup>2</sup>.

## RESULTS

- There was no significant differences of baseline eGFR (mL/min·1.73m<sup>2</sup>: 66.70±20.13 vs 70.46±21.44, P>0.05) and the incidence of CKD (36% vs 30%, P>0.05) between the COPD and Non-COPD group, respectively (As the table).
- During the follow-up, eGFR deteriorated in 82.5% patients of the COPD group, but only 74.6% patients of the non-COPD group (P<0.05).
- Compared with the group of Non-COPD, the absolute changes of eGFR/year/person were more markedly in the COPD group (COPD: -4.42±5.22, Non-COPD: -2.71±4.52, P<0.05). Meanwhile, the up volume of eGFR/year/person had no significant difference between the COPD group and non-COPD group, but the down volume had significant difference between two groups (COPD: -5.80±4.59 vs Non-COPD: -4.43±3.57). The results were shown in Figure 1.
- In the old patients with CKD, the change of eGFR/year/person had no different between the COPD group and non COPD group (P>0.05), but the change of eGFR/year/person in the old patients without CKD (eGFR≥60mL/min·1.73m<sup>2</sup>) had significant difference between the two groups (-5.38±5.43 vs -2.92±4.88, P<0.05). The results were shown in the attached Figure 2.

Table . Renal Function Of The Patients At The Baseline

	COPD (n=122)	Non-COPD (n=355)	P-value
SCr (mg/dL)	1.09±0.40	1.10±0.51	0.899
SCys (mg/dL)	1.14±0.36	1.10±0.42	0.420
eGFR (ml/min)	66.90±20.13	70.46±21.44	0.111
BUN (mg/dL)	9.52±7.76	8.02±4.68	0.012
Ua (μmol/L)	358.14±108.57	357.35±96.20	0.940

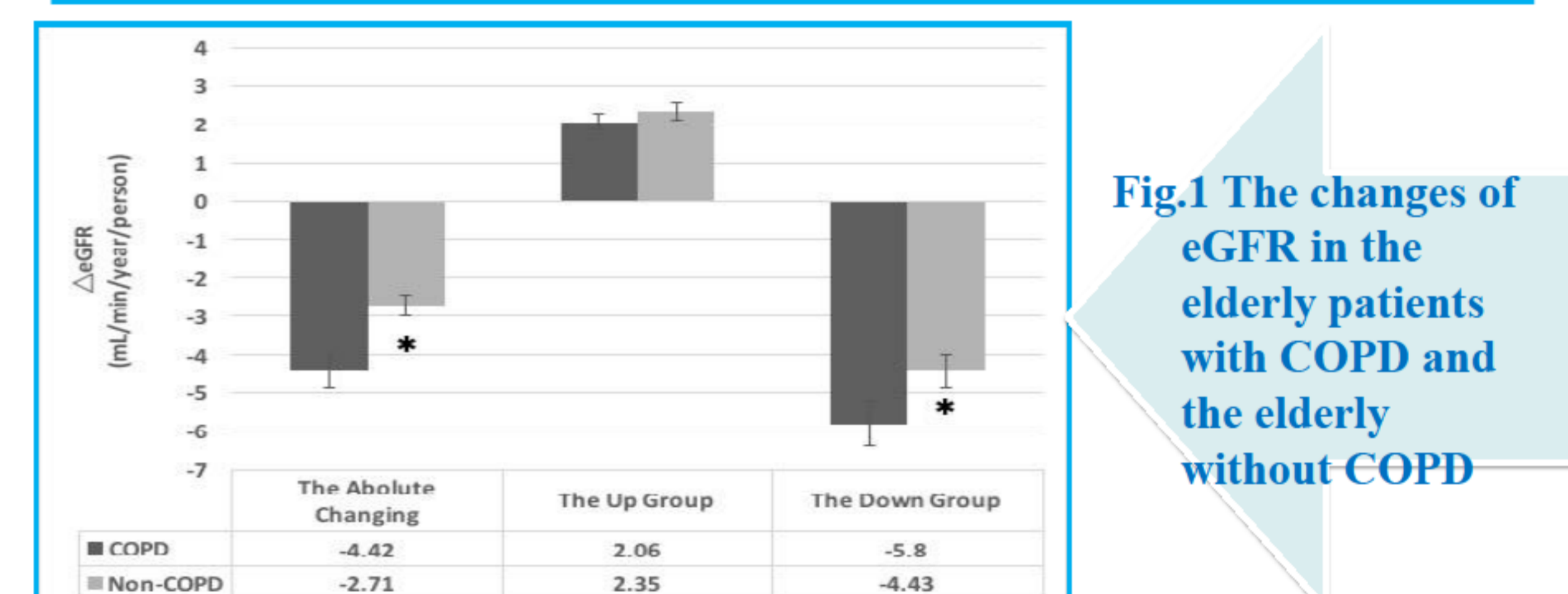


Fig.1 The changes of eGFR in the elderly patients with COPD and the elderly without COPD

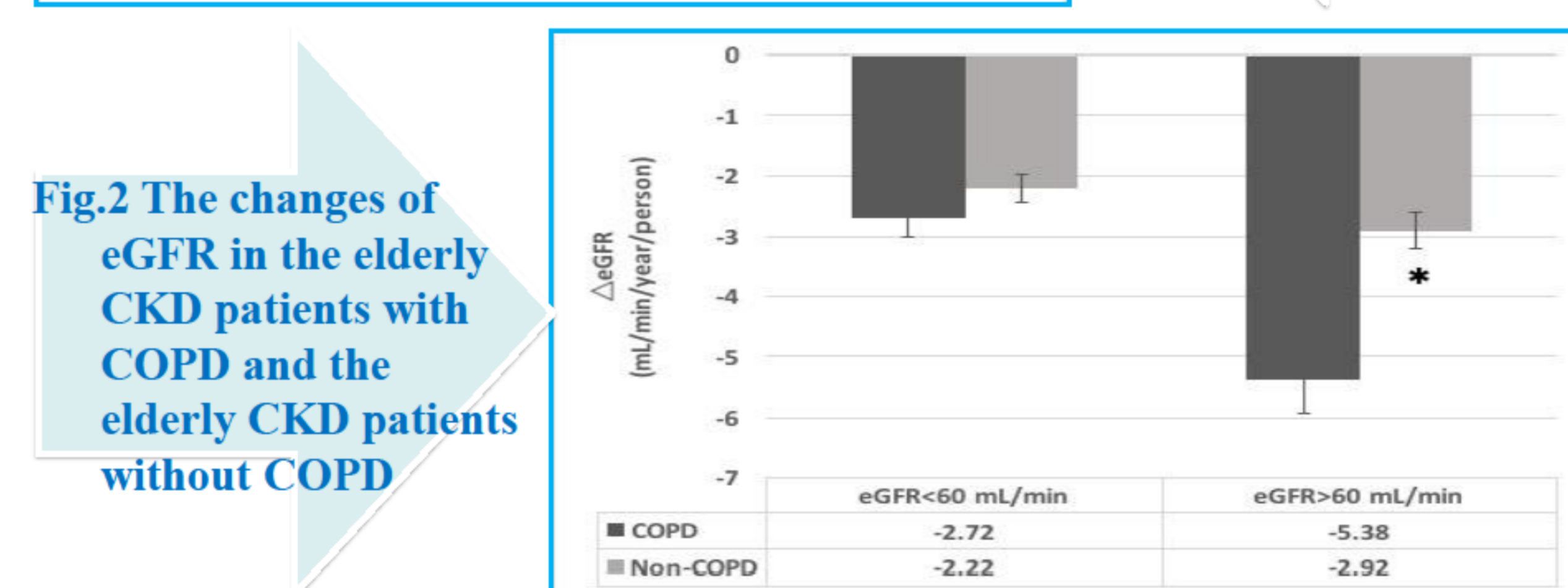


Fig.2 The changes of eGFR in the elderly CKD patients with COPD and the elderly CKD patients without COPD

## CONCLUSIONS

- The disease of COPD could significantly accelerate the decreasing rate of eGFR in Chinese male old patients, especially in those patients without CKD.

## References

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