

Angiotensin II Infusion and Renal outcomes in Invasively Ventilated COVID-19 Patients

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Background

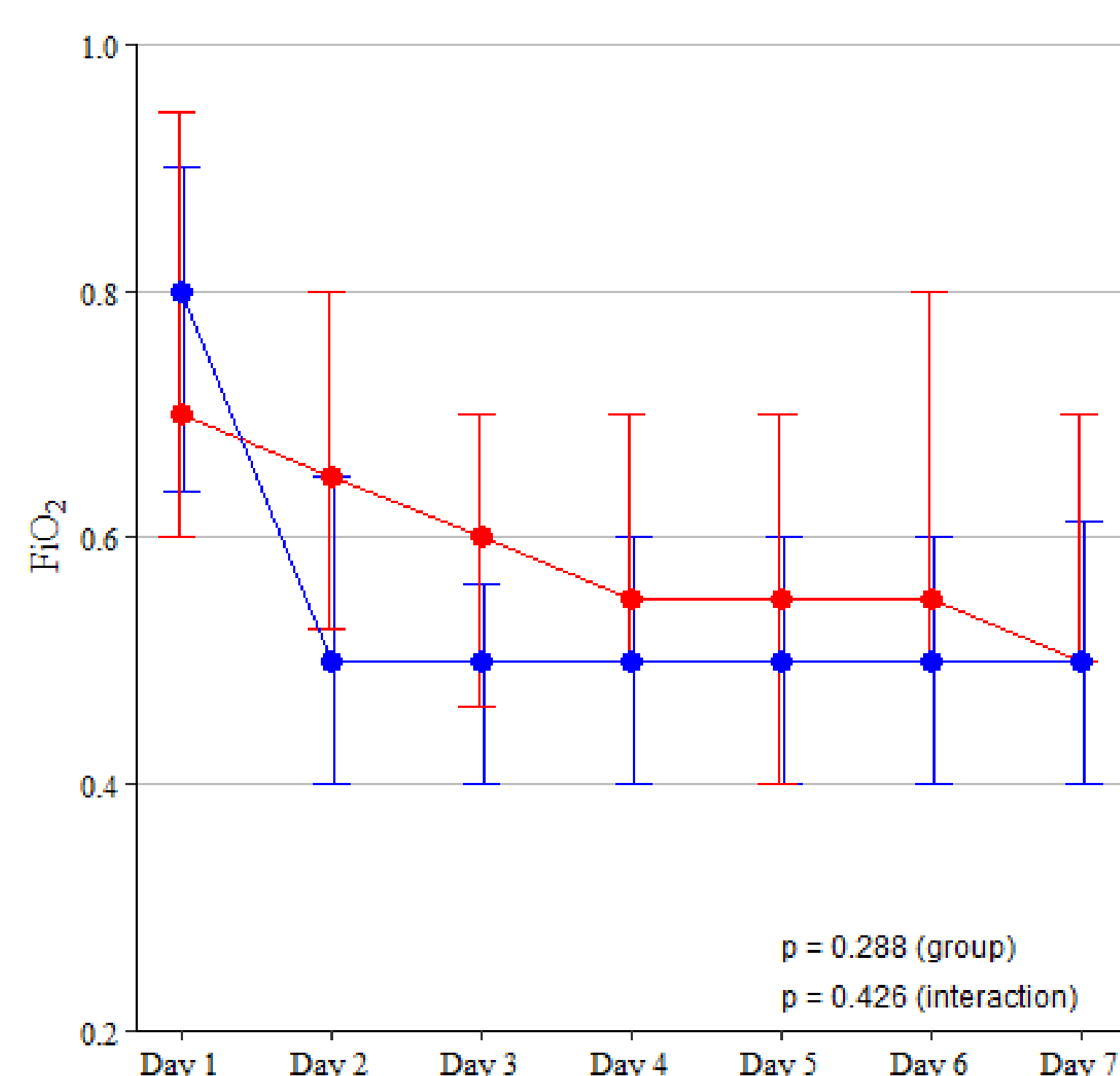
Angiotensin II (ANGII) is used either as rescue vasopressor agent or as low dose vasopressor support, but its use in invasively ventilated COVID-19 patients is controversial. Its effect on organ function is unknown.

Methods

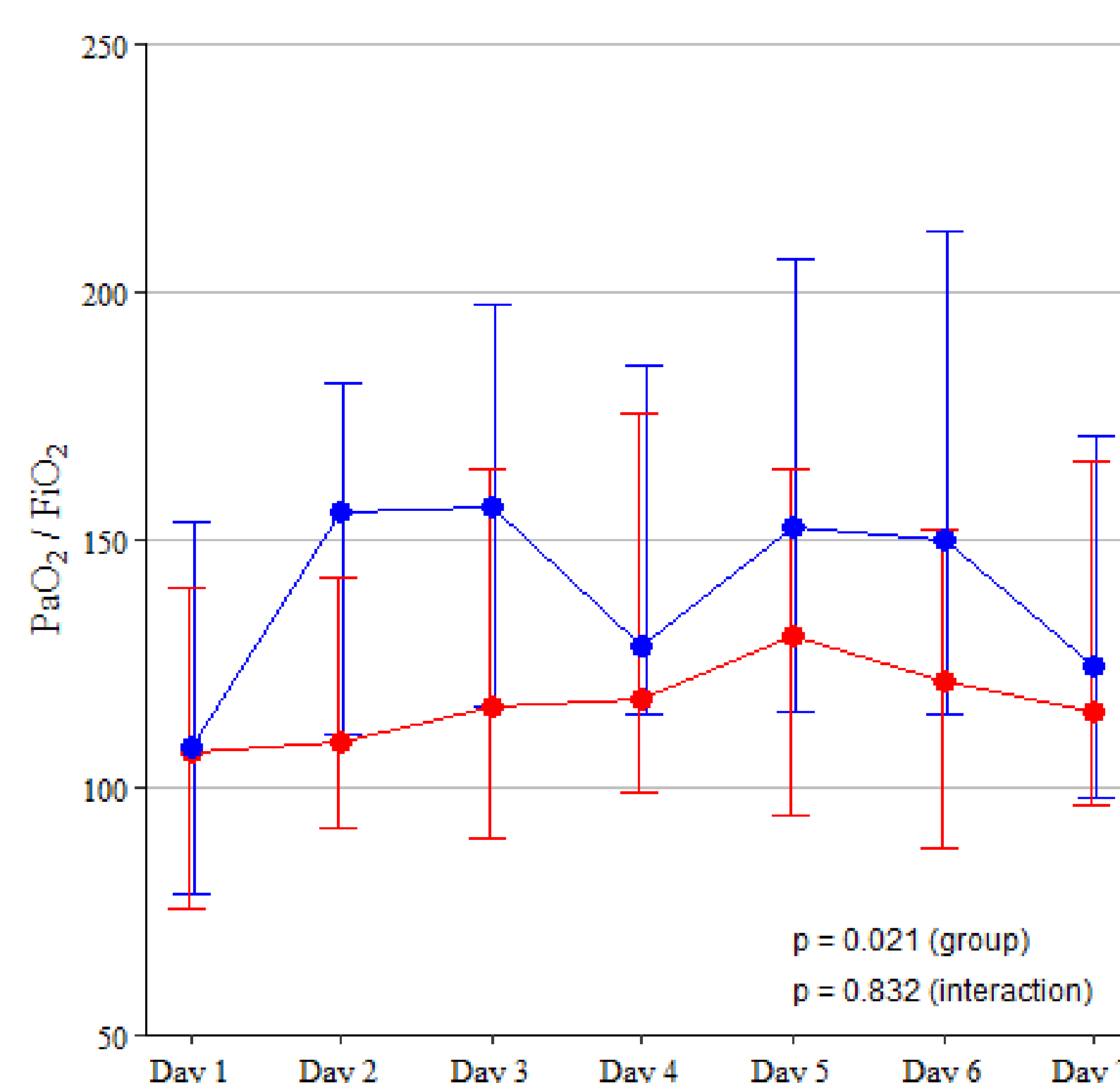
This is a prospective observational study. We included adult patients receiving mechanical ventilation due to COVID-19. Main outcome measures: Patients treated before ANGII availability or in an adjacent COVID-19 ICU served as controls. For data analysis, we applied Bayesian modelling as appropriate. We assessed the effects of ANGII on organ function.

Results

We compared 46 ANGII patients to 53 controls.



Compared with controls, ANGII increased MAP (median difference, 9.05 mmHg [95% confidence interval, 51 1.87 to 16.22]; $p = 0.013$) and $\text{PaO}_2/\text{FiO}_2$ ratio (median difference, 23.17 [95% confidence interval, 3.46 to 42.88]; $p = 0.021$) and decreased the odds ratio of liver dysfunction (odds ratio: 0.32; 0.09 to 0.94). ANGII, however, had no effect on lactate, urinary output, serum creatinine, C-reactive protein, platelet count, or thromboembolic complications. In patients with abnormal baseline serum creatinine, Bayesian modelling showed that ANGII carried a 95.7% probability of decreasing renal replacement therapy (RRT) use.



Conclusions

In ventilated COVID-19 patients, ANGII therapy increased blood pressure and $\text{PaO}_2/\text{FiO}_2$ ratios, decreased the odds ratio of liver dysfunction, in patients with abnormal baseline serum creatinine, appeared to decrease the risk of RRT use. However, all of these findings are hypothesis generating only.

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