Cite this as: Baihuan FENG, Dan ZHANG, Qi WANG, Fei YU, Qianda ZOU, Guoliang XIE, Ruonan WANG, Xianzhi YANG, Weizhen CHEN, Bin LOU, Shufa ZHENG, Yu CHEN, 2021. Effects of angiotensin II receptor blocker usage on viral load, antibody dynamics, and transcriptional characteristics among COVID-19 patients with hypertension. *Journal of Zhejiang University-Science B (Biomedicine & Biotechnology)*, **22**(4):330-340. https://doi.org/10.1631/jzus.B2000730

Effects of angiotensin II receptor blocker usage on viral load, antibody dynamics, and transcriptional characteristics among COVID-19 patients with hypertension

Key words: SARS-CoV-2, COVID-19, RAS, ACE2, hypertension

Research Summary

This article mainly focused on the association between RAS blocker usage and clinical outcomes in COVID-19 patients with hypertension, and evaluated the impacts of ARB usage on the following aspects:

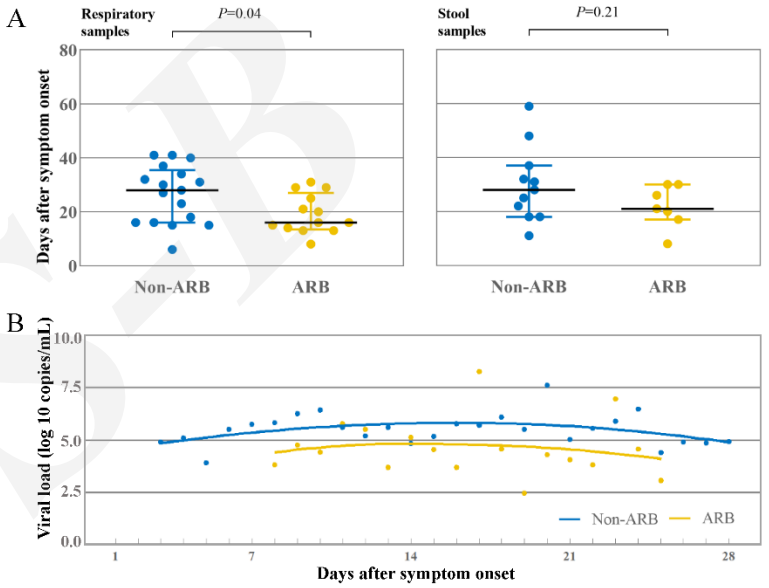
- **Viral load**
- **Antibody dynamics**
- **Soluble ACE2**
- **Gene expression**

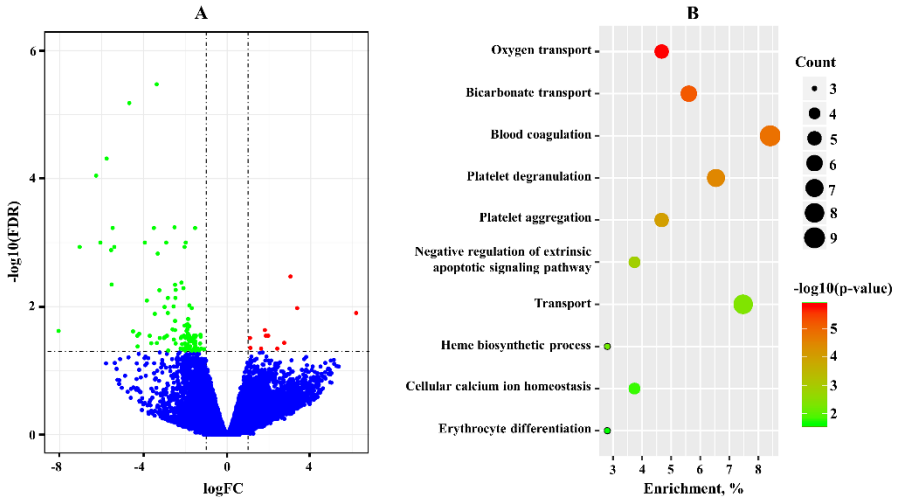
Innovation points

- **Patients in the ARB group manifested favorable results in most of the laboratory testing.**

- **Viral loads in the ARB group were lower than in the Non-ARB group throughout the disease course.**

- **Transcriptional analysis showed 125 differentially expressed genes.**

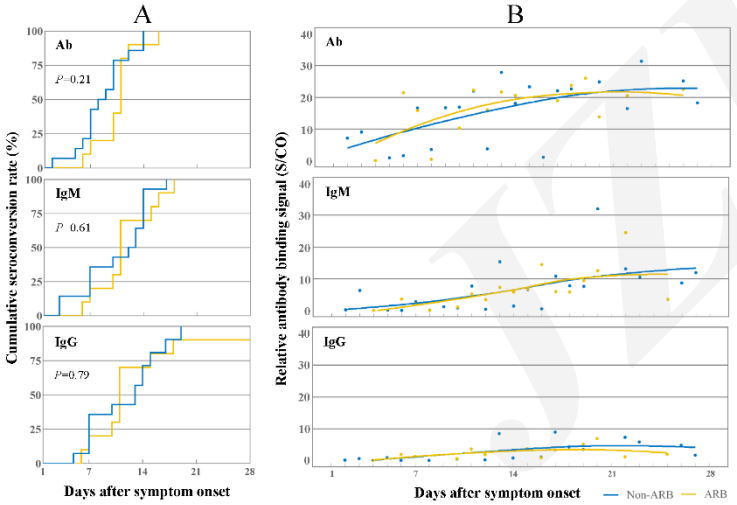


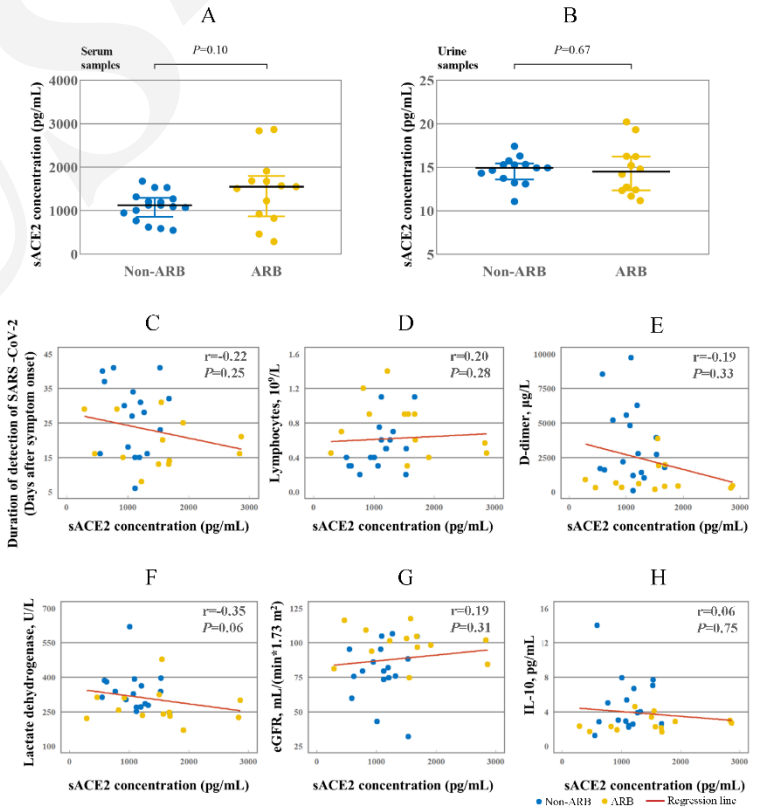


Innovation points

- **No significant difference in the time of seroconversion or antibody levels was observed between Non-ARB and ARB groups.**

- **No significant correlations between serum sACE2 and biomarkers of disease severity was observed.**





Conclusions

- **ARB usage is not associated with aggravation of COVID-19.**

- **Our findings support the maintenance of ARB treatment in hypertensive patients diagnosed with COVID-19.**