Ideal Depressor Effect of New Angiotensin II Receptor Blocker, Azilsartan, around Rest-to-Active Phase in Hypertensive Rats

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Abstract—Abnormal elevation of blood pressure in early morning (rest-to-active phase) causes many cardiovascular events. Among available angiotensin II receptor blockers (ARB), azilsartan (AZL) is known to be a superior strong and prolong profile. We determined in the present study that AZL has a beneficial depressor effect around rest-to-active phase in hypertensive rats, despite of the similar reduction of mean blood pressure by other ARB.

I. Background

Abnormal elevation of blood pressure in early morning (rest-to-active phase) causes many cardiovascular events [1]. Azilsartan, a new angiotensin II type 1 receptor blocker (ARB), is a powerful and long-acting antihypertensive agent [2, 3]. We examined if AZL suppress the elevation of blood pressure from the light-rest to dark-active phase in spontaneously hypertensive rats (SHR).

II. Methods and Results

SHR were divided into three groups, treated at 5:00 PM for 28 days with orally administered azilsartan (AZL; 1mg/kg/day), candesartan (CAN; 1mg/kg/day), or vehicle (VEH). Telemetric mean arterial pressures (MAP) for 24 hours were similarly lower in AZL and CAN, than vehicle (AZL 108±4, CAN 116±7, VEH 134±5 mmHg, p<0.01). Both in the light-rest (from 6:00 AM to 6:00 PM) and dark-active phase (from 6:00 PM to 6:00 AM), MAP were similarly lower in AZL and CAN than in VEH. However, from the last 4 hours in light-rest period to the first 2 hours in dark-active period, the degree of increased arterial pressure was significantly lower in AZN than in CAN (-2±2 vs. 3±1 mmHg, p<0.05).

III. Conclusion

These results suggest that azilsartan has a sustained depressor effect around the period from rest to active phase in SHR to a greater extent than candesartan, indicating that AZL may have a ideal benefit for hypertensive patients with pressure surge in the early morning.

REFERENCES