Ambulatory blood pressure monitoring (ABPM) has been increasingly used in clinical management of hypertension. It has been established that ambulatory 24-hour BPs are better cardiovascular risk predictors than office BPs. It has also been consistently demonstrated that nighttime sleep BPs are generally better predictors of adverse cardiovascular outcomes than daytime awake BPs on ABPM. Moreover, a lack of nocturnal BP fall, i.e. the non-dipping and/or riser pattern is known to better predict various cardiovascular end points. However, only a few studies have focused on nocturnal BP dipping pattern in stroke and/or vascular cognitive impairment. We investigated the relationship between ambulatory 24-hour BP readings and cognitive impairment across various ischemic stroke subtypes.

**ABSTRACT**

Ambulatory blood pressure monitoring (ABPM) has been increasingly used in clinical management of hypertension. It has been established that ambulatory 24-hour BPs are better cardiovascular risk predictors than office BPs. It has also been consistently demonstrated that nighttime sleep BPs are generally better predictors of adverse cardiovascular outcomes than daytime awake BPs on ABPM. Moreover, a lack of nocturnal BP fall, i.e. the non-dipping and/or riser pattern is known to better predict various cardiovascular end points. However, only a few studies have focused on nocturnal BP dipping pattern in stroke and/or vascular cognitive impairment. We investigated the relationship between ambulatory 24-hour BP readings and cognitive impairment across various ischemic stroke subtypes.

**METHODS**

Ambulatory blood pressure monitoring was performed for 441 patients with ischemic stroke in chronic stage.

Ischemic stroke patients were classified into following 7 groups according to with and without cognitive impairment
1. Single Lacunar infarction
2. Multiple Lacunar infarction
3. Lacunar infarction with cognitive impairment
4. Atherothrombotic brain infarction
5. Atherothrombotic brain infarction with cognitive impairment
6. Cardioembolic brain infarction
7. Cardioembolic brain infarction with cognitive impairment

**RESULTS**

1. The degree of nocturnal blood pressure dipping was significantly lower and nighttime blood pressure was significantly higher in the groups with cognitive impairment (p<0.0001, respectively).
2. Riser pattern was significantly prevalent in groups with cognitive impairment (p<0.0001, respectively).
3. Among groups with atherothrombotic brain infarction and cardioembolic brain infarction, extensive small vessel diseases were significantly prevalent in the groups with cognitive impairment (p=0.0004, 0.0009, respectively).
4. Multiple regression analysis revealed that age >75 years (OR: 4.0), non-dipper (OR: 5.7), and riser (OR: 18.5), and extensive small vessel disease (OR: 22.0) were independently associated with cognitive impairment.

**CONCLUSIONS**
