**Highlights**

* + Neurological deterioration occurs in stroke patients and results in poor prognosis and mortality.
  + Several factors including middle cerebral artery pulsatility index measured by transcranial Doppler sonography are known to be associated with ND, but sometimes cannot be measured because of poor temporal window.
  + Basilar artery pulsatility index can be measured even in the case of a poor temporal window.
  + Increased basilar artery pulsatility index might be associated with neurological deterioration in stroke patients.