A case report: Low dose Lacosamide caused transient complete atrioventricular block a patient with complete left bundle branch block.

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**Introduction:** Lacosamide (LCM) is a novel antiepileptic drug acting on voltage-dependent sodium channels in brain nerve. Some case reports have shown that high dose LCM (over 200mg/day) induced Atrioventricular block (AVB) in especially elderly people. It is not well known effect on AV node of low dose LCM.

**Methods:** A 71 years old man who had complete left bundle branch block (CLBBB) for over 10 years and brain metastasis from rectal cancer. He suffered from symptomatic epilepsy. He initiated low dose LCM (100mg/day), and got anti-cancer drugs. On the 119th day after initiation of LCM, he went to ER with presyncope.

**Result:** The electrocardiography showed complete AVB (CAVB). The level of Ccr was 37.24ml/min, obviously decreased compared with 2 weeks ago. LCM is a renal excretion drug, we suspected drug induced CABV. We discontinued LCM immediately, AV conduction was recovered 12 hours after the last oral administration of LCM. After 2 months, his heart rhythm remains sinus rhythm without AVB.

**Conclusion:** The permissible dose of LCM for the patients with renal dysfunction (Ccr < 30mL/min) is up to maximum 300mg/day. In this case, he developed CAVB in spite of low dose LCM administration. It is well known that sodium currents play a important role of cardiac conduction especially in Purkinje fibers. He had intraventricular conduction delay (CLBBB) for over 10 years, LCM might have worsened his remaining right bundle branch conduction. And also, there might be elevation of blood concentration of LCM due to rapidly progressed renal dysfunction. We report a case that low dose LCM caused transient CAVB in a 71 years old man with CLBBB and rapidly progressed renal dysfunction. This case report indicates that we need to use LCM carefully when the patient has intraventricular conduction delay, especially change in renal function.