

[LETTERS TO THE EDITOR]

**Appropriate Strategy for Preventing
Bradycardia-induced Cardiac Arrest by
Dexmedetomidine**

Key words: cardiology, hemodynamics, sedation

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To the Editor We read with great interest the case report by Yamasaki et al. (1) describing bradycardia-induced cardiac arrest following the administration of dexmedetomidine as a loading/maintenance dose during endoscopic submucosal dissection. Several concerns have been raised.

Patient selection is of great importance for the safe use of dexmedetomidine. A low baseline heart rate is a risk factor for critical bradycardia following the administration of dexmedetomidine, and randomized control studies have excluded those with baseline heart rates of less than 50-55 bpm. A high age, small physique, and cardiovascular diseases are also risk factors of drug-induced critical bradycardia (2). Another concern is a risk of loading administration prior to maintenance one. A meta-analysis confirmed the inferiority of loading administration to maintenance administration for preventing negative chronotropic effects (3, 4). The patient here was 81 years old and probably had a small physique (body weight was 55 kg) with relative bradycardia (base heart rate 60 bpm). This patient might therefore not be an appropriate candidate for loading administration (5). Dexmedetomidine is metabolized in the liver and excreted in the urine. Were the patient's hepatic and renal function impaired?

The last concern is the etiology of cardiac impairment. His electrocardiogram showed ST-segment elevation in II, III, and aVf leads. In general, takotsubo cardiomyopathy is

accompanied by a persistent giant T wave in the electrocardiogram. Did the authors monitor the electrocardiogram? Another suspected etiology is cardiac stunning due to transient cardiac low perfusion. However, this scenario in general is accompanied by broad ST-segment elevation in the electrocardiogram. Coronary spasm is a complication of dexmedetomidine. Coronary spasm of the right coronary artery often complicates bradycardia and atrioventricular block. Coronary angiography often shows no stenosis when a vasodilator is administered beforehand.

The authors state that they have no Conflict of Interest (COI).

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References

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