## Pheochromocytoma-induced takotsubo syndrome: what does an intensivist need to know? Reply to commentary

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Dear Editor,

We read with great pleasure and interest the commentary by Professor Kenan Yalta [1] about our article and below we attempt to answer his questions [2].

First of all, the diagnosis of pheochromocytoma is never simple and straightforwardly didactic, because this is a rare tumor in itself, especially in an emergency and life-threatening situation. Epidemiological data and anamnesis alone are not decisive, and the differential diagnosis must necessarily make use of laboratory tests and radiological imaging techniques. In our setting, unfortunately, the urinary concentration of catecholamines and their metabolites is not readily available. But, despite this, blood tests and radiological images helped us in the diagnosis.

Secondly, at that moment coronary angiogram ruled out coronary disease and spasms, but a mild slow coronary flow pattern was present. We cannot exclude that this was one of the factors predisposing to cardiac arrest. With the support of the consultant cardiologist, we were able to exclude the presence of hemodynamically significant left ventricular outflow tract obstruction, conducting daily echocardiographic assessments.

Thirdly, as rightly pointed out by Prof. Yalta, levosimendan could be a possibility in the treatment of cardiogenic shock to support cardiac pump function. In fact, this drug was initially tried but did not show the expected efficacy, and consequently dobutamine was used, accompanied by controlled volume replenishment with crystalloids to avoid pulmonary edema.

The norepinephrine-dobutamine association is a consolidated practice in states of cardiogenic shock according to international protocols and guidelines. Furthermore, we would like to emphasize that the patient's hemodynamic stability was fully achieved only after surgery.

In conclusion, our clinical case points out how the multidisciplinary approach is of fundamental importance, among various specialties, to achieve a good result. We greatly appreciate the comment by Prof. Yalta, full of stimuli for reflections and indepth notions on this rare pathology, which can sometimes occur in emergency conditions. We want to thank him for this, with the hope of having answered the raised questions exhaustively.

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