

PERCUTANEOUS CATHETER-DIRECTED INTERVENTION FOR ACUTE PULMONARY EMBOLISM: A SINGLE-CENTER EXPERIENCE AT INSTITUT JANTUNG NEGARA

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INTRODUCTION

This case series involves 12 patients with acute pulmonary embolism (APE), aged between 22 and 77 years old, who underwent percutaneous catheter-directed intervention (CDI). The treatments included catheter-directed thrombolysis (CDT) using the EkoSonic Endovascular System (EKOS) and mechanical thrombectomy (MT) with either the Penumbra Indigo Aspiration System or the FlowTrieve system.

CASE DESCRIPTION

ID	Age	Gender	HOPI	Risk Factor	Hemodynamic Instability	O ₂ therapy	PE Severity	Mode of Therapy	LOS (Days)	Complication	Remarks
1	30	M	SOB	-	✗	✗	Low	EKOS	6	✗	CTPA - Massive PE
2	84	F	SOB, Pelvic #	Prolonged immobilization	✗	✓	Int-Low	EKOS	11	✗	-
3	77	M	SOB, Reduced effort tolerance	Prolonged immobilization	✗	✓	Int-High	EKOS	9	✗	-
4	22	F	SOB, Chest discomfort, Presyncope	Prolonged immobilization, DVT	✗	✓	Int-High	EKOS	12	✗	-
5	52	F	SOB	OCP	✗	✓	Int-High	EKOS	3	✗	-
6	50	F	SOB	Prolonged immobilization	✗	✓	Int-High	INARI	8	✗	-
7	69	M	SOB, Post-trauma	Prolonged immobilization	✗	✓	Int-High	PENUMBRA	4	TBL 0.7L 3	Post trauma
8	49	F	SOB, Presyncope, Menorrhagia	-	✗	✓	Int-High	PENUMBRA	8	TBL 1.5L 2	Fibroid
9	43	F	SOB	-	✗	✓	Int-High	PENUMBRA	5	TBL 1.2L 1	BARC 2
10	58	M	SOB	-	✗	✓ (HFM 15LPM)	Int-High	PENUMBRA	7	TBL 0.9L 1	BARC 2
11	53	F	Presyncope	Prolonged immobilization	✓	✓ (VM60%)	High	PENUMBRA	6	TBL 1.0L 1	BARC 2
12	33	M	Hemoptysis	DVT. Bilateral PE	✓	Intubated	High	PENUMBRA	10	TBL 1.0L 2	BARC 3a

DISCUSSION

Traditional treatment options for APE include anticoagulation, systemic thrombolysis and surgical embolectomy. New catheter-directed intervention techniques are revolutionising the treatment of APE, and provides high-risk and intermediate risk APE patients with a possible safer alternative therapy. In our case series, all patients survived to discharge, and they either showed clinical or RV function improvement on echocardiography. Complications were limited to blood loss during the procedure with Penumbra MT. Device selection (CDT vs. MT) should be individualized based on institutional expertise, patient's risk profile, clot burden and patient's preference.

CONCLUSION

CDI is safe and effective for selected intermediate & high-risk APE patients, with excellent survival and functional outcomes.

REFERENCE

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