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COST-COMPARISON OF INTRACARDIAC AND TRANSESOPHAGEAL ECHOCARDIOGRAPHY TO GUIDE LEFT ATRIAL APPENDAGE OCCLUSION

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COST-COMPARISON OF INTRACARDIAC AND TRANSESOPHAGEAL ECHOCARDIOGRAPHY TO GUIDE LEFT ATRIAL APPENDAGE OCCLUSION

BACKGROUND

Echocardiographic imaging is paramount during left atrial appendage occlusion (LAAO).

Observational studies have demonstrated similar efficacy and safety of intracardiac echocardiography (ICE) from the left atrium and transesophageal echocardiography (TEE)^{1,2}.

However, the high cost of ICE catheters may be a concern.

PURPOSE

To perform a cost-comparison of TEE and ICE guided LAAO by estimating the mean cost per patient.

METHODS

Study design

- A retrospective cost-analysis based on a single-center cohort of patients undergoing LAAO at Aarhus University Hospital, Denmark.
- Procedural data, efficacy and safety has been published previously¹

The Danish Healthcare system

- Publicly financed through general taxes, with equal availability of healthcare to all residents regardless of financial status.
- Individual hospital costs are supported by a system of central government block grants and reimbursement.

Cost-identification

- A public hospital perspective with a micro-costing approach was applied to estimate patient-specific in-hospital costs between TEE and ICE guided procedures.
- Costs common to both procedures were excluded from analysis

LAAO setup

AARHUS

All patients were admitted the day before the intervention, and had preprocedural cardiac CT for exclusion of LAA thrombus and device sizing. The LAAO was performed using the Amplatzer Cardiac Plug or Amulet. Patients were admitted overnight for observation and a transthoracic echocardiogram was performed before discharge.

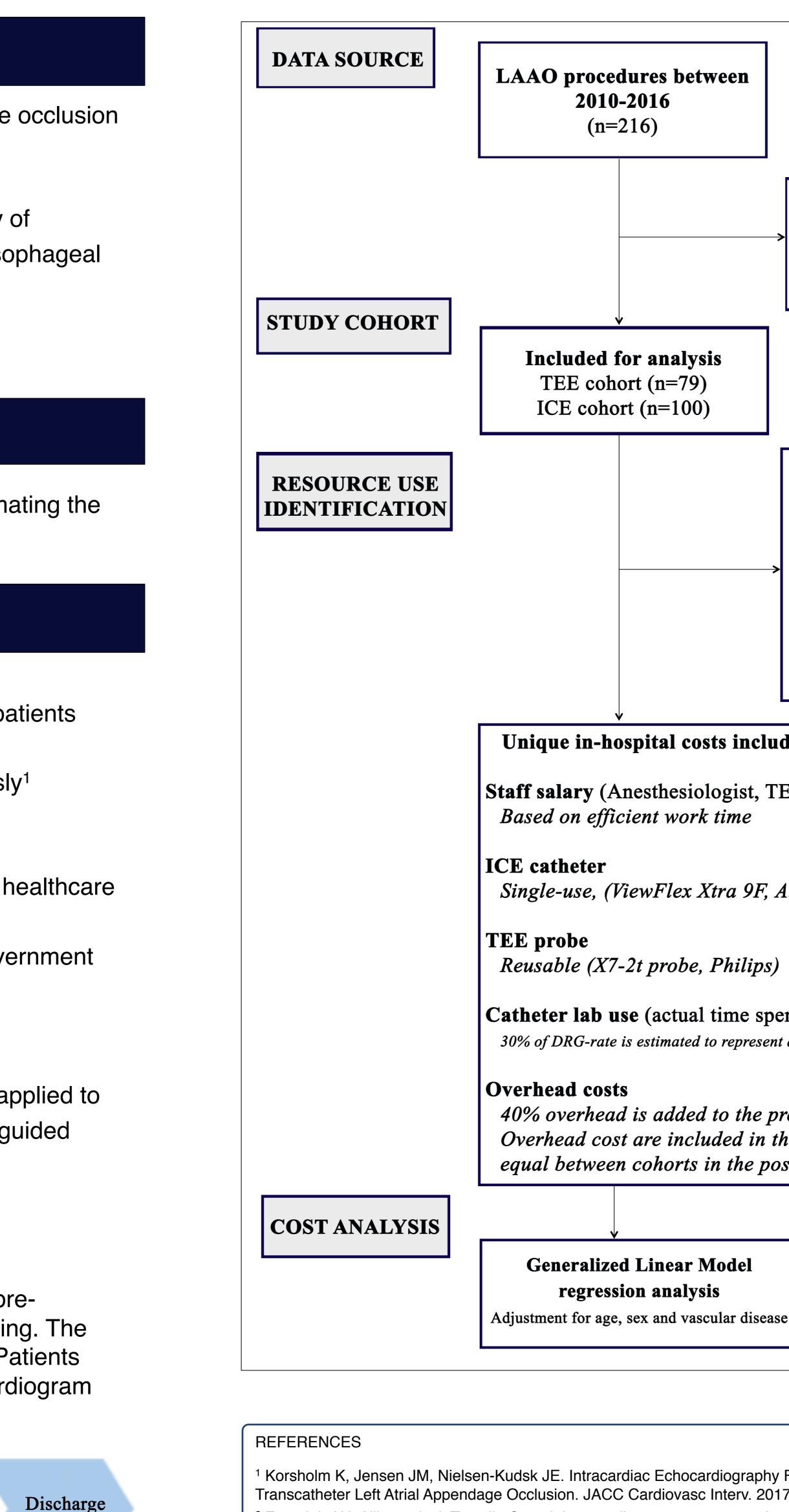


The in-hospital period was subdivided into 5 time periods, the unique resource use and costs were identified for each period.

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DATA SOURCE	LAAO procedures between		
	2010-2016 (n=216)		The results are presented below
		→ 37 patients excluded due to missing data* TEE cohort (n=28) ICE cohort (n=9)	Mean cost pr. patient
STUDY COHORT	Included for analysis TEE cohort (n=79) ICE cohort (n=100)		Admission day cost Pre-procedural turnover cost
RESOURCE USE IDENTIFICATION		Common cost excluded • Pre-LAAO cardiac CT	Procedural cost
IDENTIFICATION		 Pre-LAAO bed day and ward staff ECG, Blood sampling costs Utilities common to both procedures 	Post-procedural turnover cost
		 (transseptal needle, GW002 wire, pigtail) LAAO device and delivery sheath Discharge X-ray + Echocardiogram 	Post-procedure cost
			Mean cost per patient in US dollars. Results are repo
	Unique in-hospital costs included Staff salary (Anesthesiologist, TEE and LAAO operator, Nurses) Based on efficient work time		standard deviation. <i>Pre-procedural turnover</i> = Time from arrival at the ca <i>Procedure time</i> = Time from venous puncture till vas <i>Post-procedural turnover</i> = Time from vascular closu
	ICE catheter Single-use, (ViewFlex Xtra 9F,	Abbott)	
	TEE probe Reusable (X7-2t probe, Philips Catheter lab use (actual time sp	 This is a single-center stud generalizability may depen healthcare structure. 	
	30% of DRG-rate is estimated to represe Overhead costs 40% overhead is added to the Overhead cost are included in	 The results are estimates variables included in the ar 	
	equal between cohorts in the p	ostprocedural period.	C
COST ANALYSIS	Generalized Linear Model regression analysis Adjustment for age, sex and vascular disea	ase * Missing by random	 The cost of ICE catheters No need for general anes Less personnel required Reduced overall time use
DEEEDENIGEO			
	en-Kudsk JE. Intracardiac Echocardiograph dage Occlusion. JACC Cardiovasc Interv. 20	ny From the Left Atrium for Procedural Guidance of 017	Thus, ICE from the left atr
occlusion with Watchman. Cath	nplin C et al. Intracardiac versus transesoph eter Cardiovasc Interv. 2017 Aug 1;90(2):33 istry of Health, D. Healthcare in Denmark. A		This may aid decision-maki atrium, from a health-econd

Aarhus University Hospital

RESULTS

as mean cost per patient in US Dollars.

TEE cohort

ICE cohort

4921 (CI: 4350-5697) 5220 (CI: 4951-5610)

	17 ± 0	-
	1566 ± 568	939 ± 435
	2341 ± 1300	4146 ± 432
t	938 ± 470	536 ± 218
	26 ± 3	_

orted with bias-corrected and accelerated 95% confidence intervals or \pm

atheter lab to venous puncture.

scular closure. ire till exit of catheter lab.

IMITATIONS

dy based on a public healthcare system. Its nd on the reimbursement system and

with uncertainty. They reflect only the cost nalysis.

ONCLUSION

appears to be balanced out by esthesia,

per procedure, sed in the catheter lab.

rium appears to be cost-neutral.

king between TEE and ICE from the left omic perspective.