

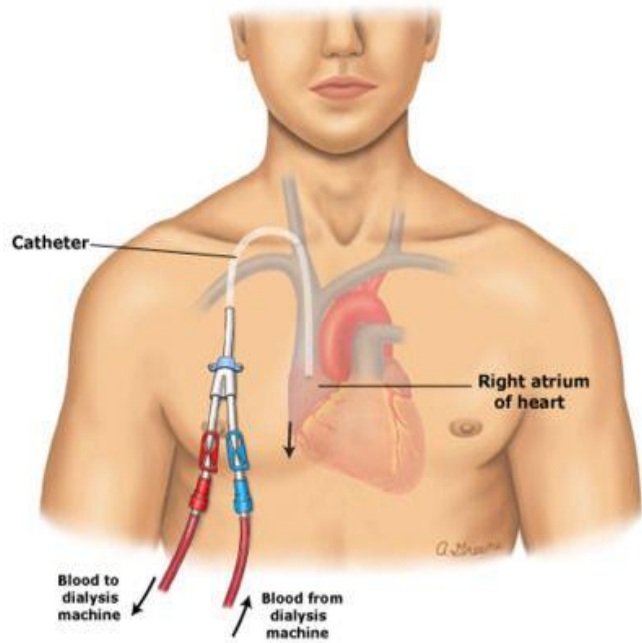
Testing a New Locking Solution for Better Hemodialysis Catheter Care

Amber Molnar

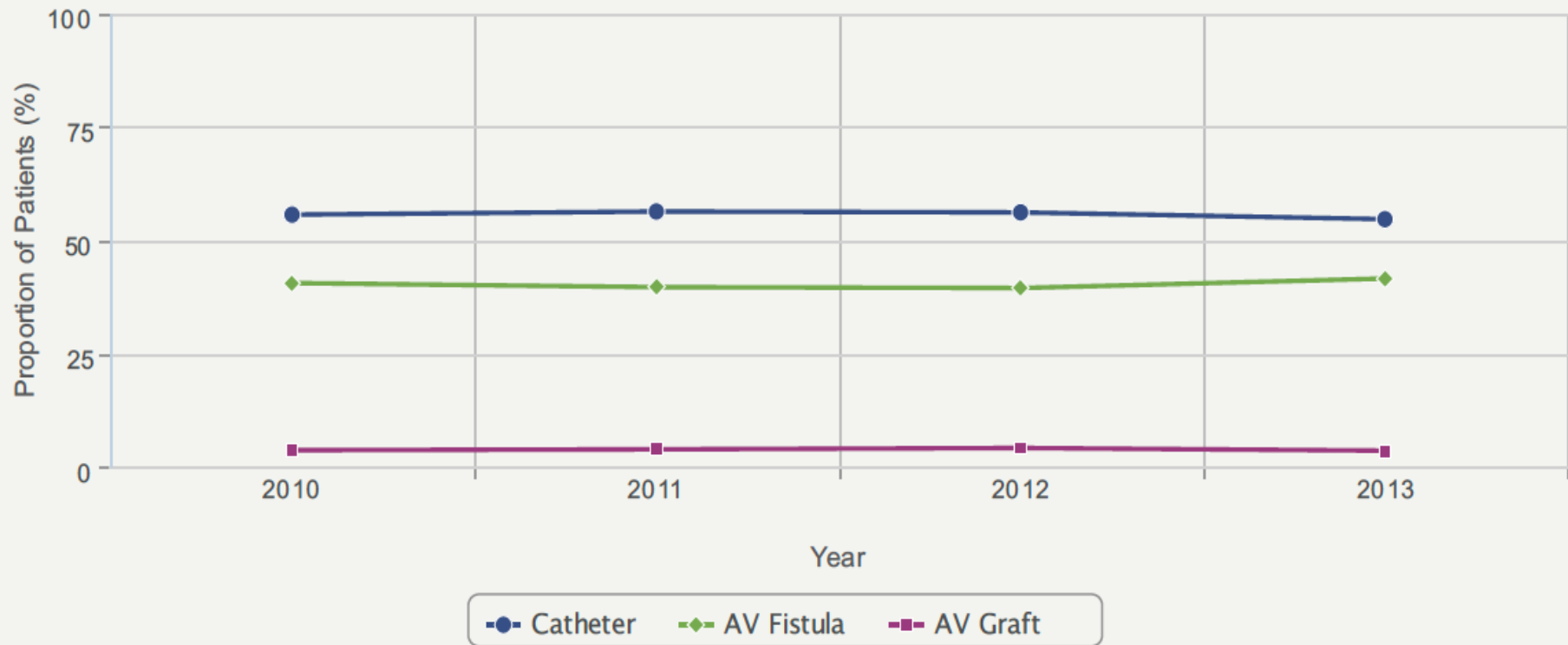
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Proportion of Prevalent Hemodialysis Patients by Vascular Access Type, Ontario, 2010 - 2013

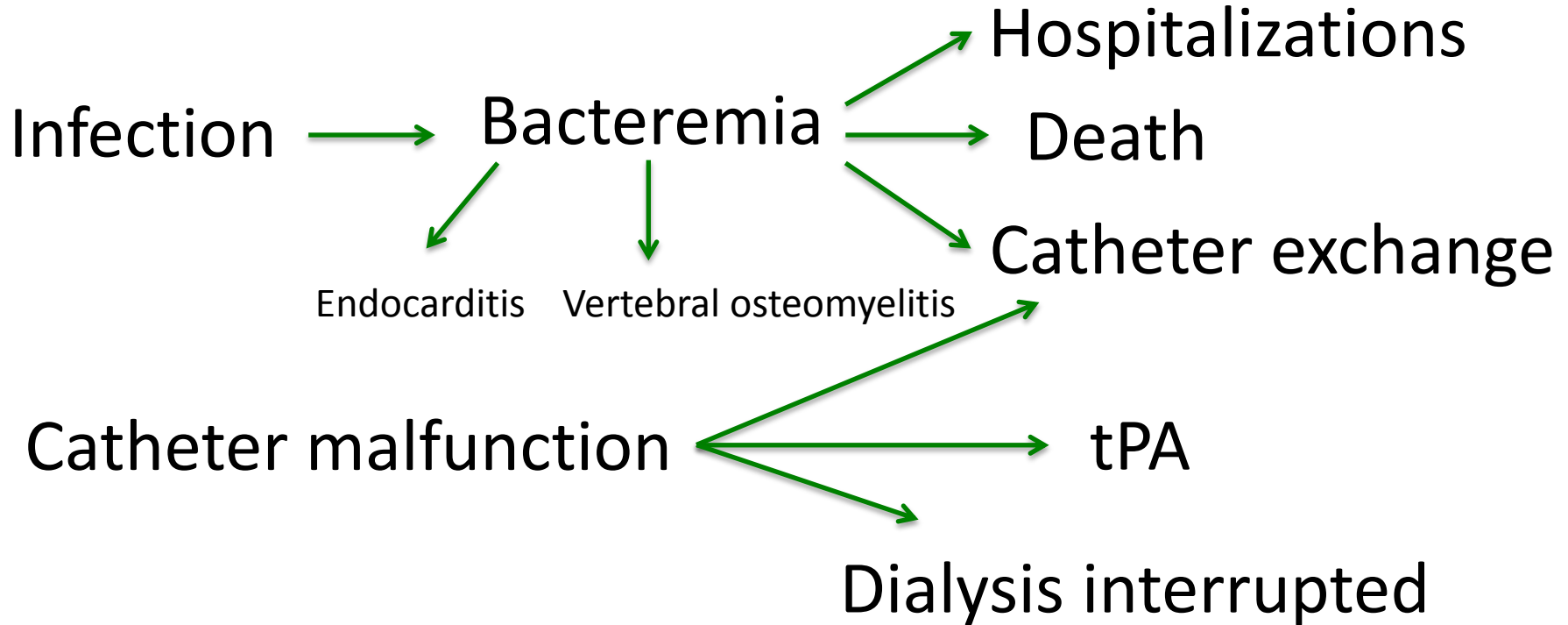


Report Date: February 2015

Source: Ontario Renal Reporting System



Catheter Complications



Catheter Locks



Catheter Locks

- Antithrombotic
- Antimicrobial (non-antibiotic)



4% trisodium citrate

4% tetrasodium EDTA

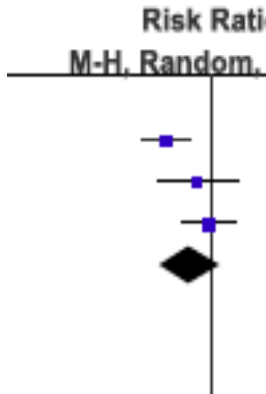


Citrate vs. Heparin

Citrate		Heparin	
Events	Catheter days	Events	Catheter days
9	8431	33	8116
5	2273	6	1818
13	19008	12	17100

Catheter related bacteremia

↓ **by 46%** (0.22-1.30)



Favours citrate

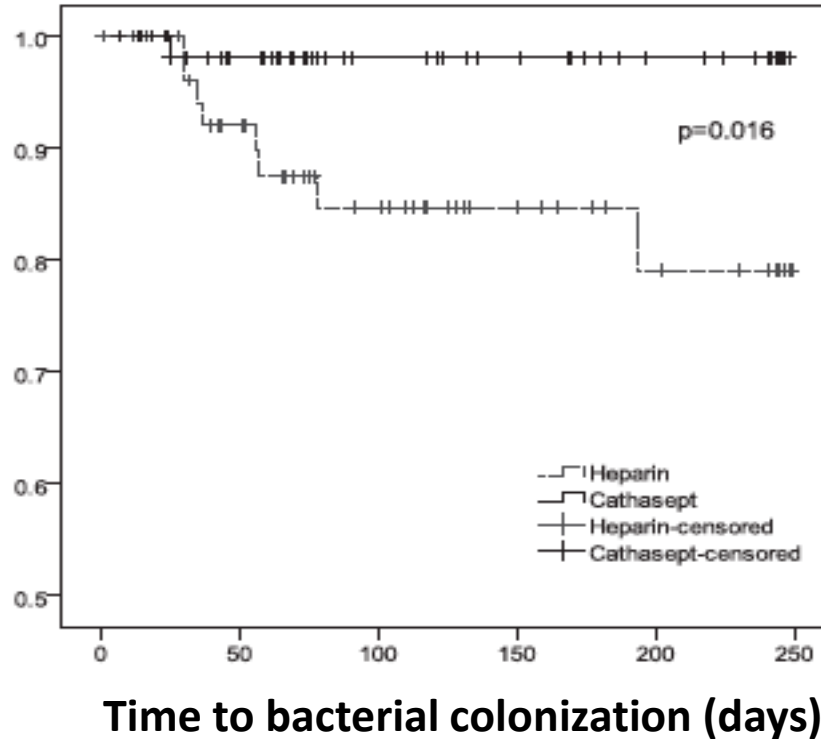
Favours heparin



Liu et al. Int J Clin Exp Med. 2015;8(8):11985-11995
 Zhao et al. AJKD. 2014; 63(3):479-490

EDTA vs. Heparin

Survival



M-EDTA vs. 30% Citrate

Catheter dysfunction events
defined by increased hydraulic resistance

	M-EDTA	30% citrate	Heparin
Number of events	2 (8.7%)	4 (18%)	18 (78%)
Event rate per 1000 catheter days	0.9	2.0	9.2

Research Question



Do HD centres that adopt

Citrate-based catheter locks

vs.

EDTA-based catheter locks

in patients with a **tunneled catheter** have different rates of **catheter-related bacteremia and catheter exchanges?**

Methods

- Simple intervention delivered at the dialysis unit or program level
- Outcomes tracked using routinely collected data
 - Catheter related bacteremia (cases/1000 catheter days)
 - Catheter exchanges



Supplemental Data Collection

- Blood flow rate on dialysis
- Dialysis adequacy
- Tissue plasminogen use
 - Cost effectiveness

Catheter dysfunction



Infection Data: 12-Month CRB Rate (Jan-Dec 2017)

Program	12-Month Rate
Y	0.08
P	0.10
O	0.11
T	0.13
W	0.15
H	0.15
B	0.16
D	0.16
X	0.16
Q	0.17
S	0.17
K	0.17
E	0.17

Program	12-Month Rate
U	0.18
DD	0.19
Z	0.21
I	0.24
C	0.24
R	0.24
G	0.28
F	0.30
L	0.31
N	0.32
V	0.35
M	0.35
A	0.37
J	0.82

ONT ~400 catheter related infections per year

Feasibility

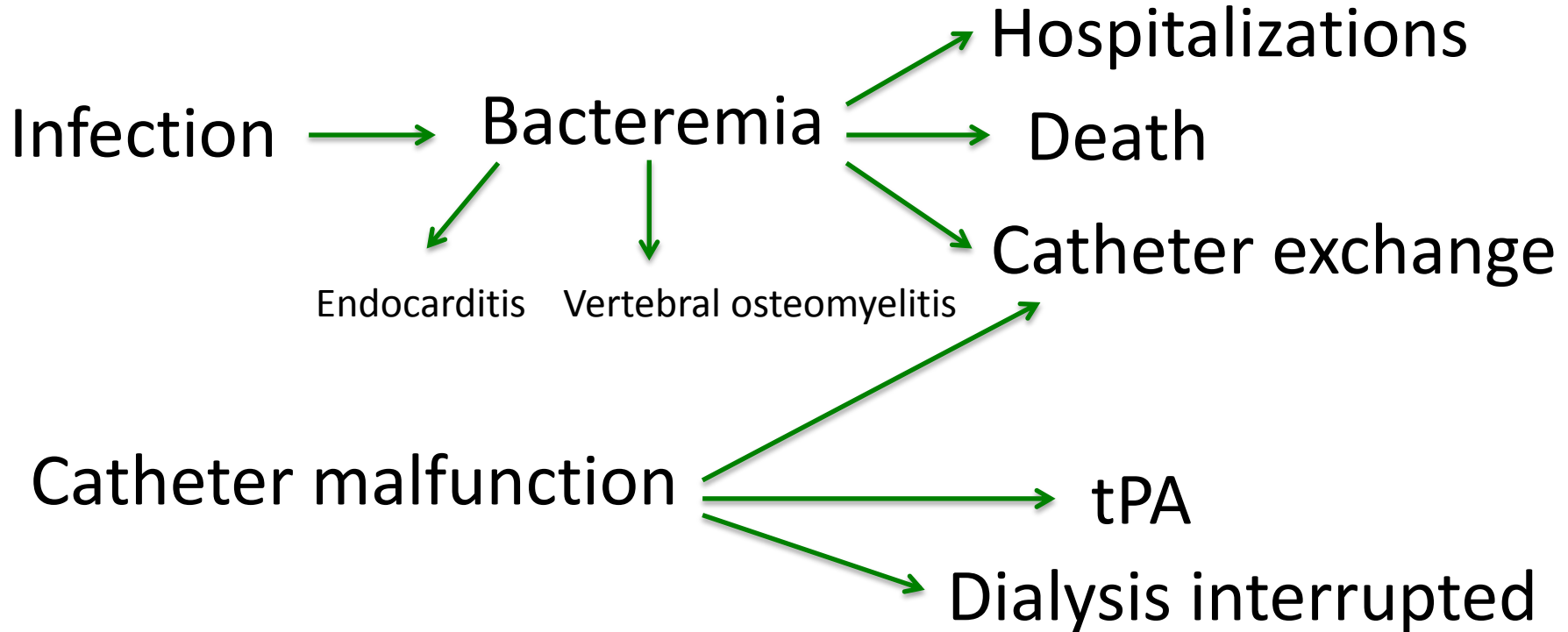
- ~50% catheter prevalence (~4,000 patients)
- Baseline rate of catheter related bacteremia
- Anticipated effect size



Cost of the Intervention



Potential Implications for Clinical Practice



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Panelist

Jennifer MacRae

Alison Thomas

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Craig Lindsay

Role Perspective

Nephrologist

Nurse Practitioner

Nephrologist

Nephrologist

Patient