


UC DAVIS HEALTH Department of Surgery
Division of Vascular Surgery

How Can The Turndown Rate For Invasive Treatment Of Ruptured AAAs Be Decreased And Is It Worthwhile


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I have no disclosures




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Epidemiology of ruptured AAA

- 10% - 20% die without treatment (turndown rate)
- One in five are transferred for care
- 70% - 80% receive treatment with 30% - 50% mortality



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Mell MW et al. J Vasc Surg 2014; 60:553-57
Lim S et al. J Vasc Surg 2022; 76:1548-54



How Can The Turndown Rate For Invasive Treatment Of Ruptured AAAs Be Decreased?


- Limit the use of risk scores
- Local treatment for rEVAR when feasible
- Rapid and efficient transfer for treatment when required

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Limit the Use of Risk Scores

- Attempts for over 20 years
- Not universally adopted:
 - Complex, outdated, not validated
- An effective scoring system:
 - Externally validated
 - Simple
 - Easy
 - Applicable to open surgery and EVAR
 - Clinically useful in predicting certain death



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J Vasc Surg 2016;64:1617-22



Predicted versus Actual Mortality


Algorithm	Predicted Mortality (%)	Actual Mortality (%)
Glasgow	80	70
Vancouver	85	63
Edinburgh	80	60
VSGNE	87	50
ANN	89	67
Hardman	100	60
UW	100	50

Certain mortality is predicted in very few patients (2% - 3%) vs. 10% - 20% Turndown Rate

May be helpful for discussions of prognosis, practicality of transfer


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Thompson et al. J Vasc Surg. 2016 Dec;64(6):1617-1622



Local treatment when rEVAR is feasible

- 10% - 20% die without treatment (turndown rate)
- One in five are transferred for care
- Up to one in five of those transferred died without receiving treatment**



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Local treatment when feasible

2014: Transfer associated with:
Worse OVERALL mortality
Better OPERATIVE mortality

2022: Transfer associated with:
Worse OVERALL mortality
Equivalent OPERATIVE mortality rEVAR
Better OPERATIVE mortality for rOAR

Survival is associated with:
- Access to EVAR inventory
- Expertise with open aortic surgery
- High aortic volumes

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What is a high volume hospital?

Author	Yearly Volume Threshold
Dimick ¹	35 cases
Scali ²	13-16 open cases
Capo ³	40
Lim ⁴	53

1: J Vasc Surg 2003;38:739-44
2: Eur J Vasc Endovasc Surg 2021;61:747-55.
3: Eur J Vasc Endovasc Surg 2024;68(1):30-38
4: J Vasc Surg 2022;76:1548-54

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Is Decreasing the turndown rate worthwhile?

Turn-down Rates and Mortality UK vs. USA

	UK	USA	p value
Any intervention offered	58.5%	80.4%	<.0001
Overall mortality	66%	53%	<.0001
Operative mortality	41.8%	41.7%	.9
Received rEVAR	8.5%	20.9%	<.0001

Lancet 2014;383: 963-9

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Is Decreasing the turndown rate worthwhile?


With a 50-70% of mortality in high risk patients, aggressive approach to repair can prevent mortality in even the highest risk patients.

Low turn-down rates, EVAR and OAR at high volume centers **improves outcomes**

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