

research



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ORIGINAL RESEARCH Registry based cohort study

De-adoption and exnovation in the use of carotid revascularisation

Bekelis K, Skinner J, Gottlieb D, Goodney P

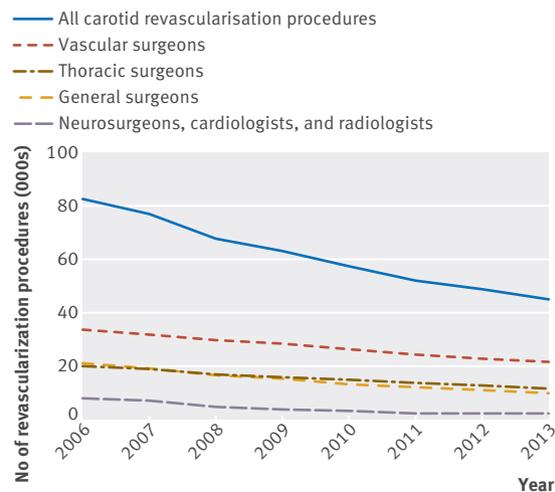
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Study question What are the physician characteristics associated with exnovation (scaling back on use) and de-adoption (abandoning use) of carotid revascularisation?

Methods This cohort study used US Medicare claims linked to the Doximity database provider registry to study the characteristics of physicians who performed carotid revascularisations between 2006 and 2013. Using multivariable regression models the authors examined the association of physician characteristics, such as specialty, experience, volume, and patient characteristics with the rate of change in use of carotid revascularisation.

Study answer and limitations At baseline (2006-07), 9158 physicians performed carotid revascularisations. By 2012-13 use of carotid revascularisation in this cohort had declined by 37.7%, with two thirds attributable to exnovation rather than to de-adoption. Compared with physicians with fewer than 12 years of experience, those with more than 25 years of experience decreased use of carotid revascularisation by an additional 23.0%. The lowest rates of decline occurred in physicians specialising in vascular or thoracic surgery, for whom the procedures accounted for a large share of revenue. Limitations of the study include its retrospective nature, its reliance on Medicare data, and any misclassification bias attributable to Doximity.



Annual rates of carotid revascularisation procedures in Medicare beneficiaries stratified by specialty, 2006-13

What this study adds Those physicians who readily accept change in medical practice are likely to be more experienced than those who accept change less readily; the latter physicians are in specialties in which carotid revascularisations comprise a larger practice share. Efforts to guide physicians in the use of treatments where the evidence is evolving towards alternatives should consider these practice factors to effectively inform change.

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Antibiotics or NSAIDs for uncomplicated UTIs?

ORIGINAL RESEARCH Randomised, double blind trial

Symptomatic treatment of uncomplicated lower urinary tract infections in the ambulatory setting

Kronenberg A, Bütikofer L, Oduyayo A, et al

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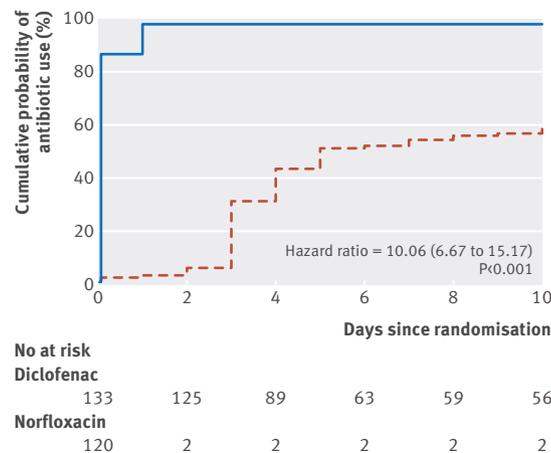
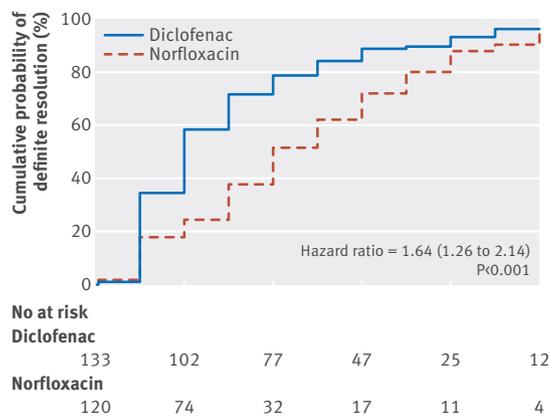
Study question Does symptomatic treatment of uncomplicated lower urinary tract infection

(UTI) with the non-steroidal anti-inflammatory drug diclofenac result in patient reported outcomes comparable to antibiotic treatment with norfloxacin?

Methods This randomised, double blind study was conducted in 17 general practices in Switzerland. Overall, 253 women with uncomplicated lower UTI were randomly assigned to symptomatic treatment with diclofenac (n=133) or antibiotic treatment

with norfloxacin (n=120) in a 1:1 ratio. The primary outcome was resolution of symptoms at day 3. Important additional outcomes were symptom duration, consultations, antibiotic consumption, and risk of pyelonephritis.

Study answer and limitations 72/133 (54%) women assigned to diclofenac and 96/120 (80%) assigned to norfloxacin experienced symptom resolution at day 3 (risk difference 27%, 95% confidence interval 15% to



Kaplan-Meier plots for time until definite resolution of symptoms and time until antibiotic use up to day 10

COMMENTARY Pain relief and a delayed antibiotic prescription is a pragmatic and balanced approach

Urinary tract infection (UTI) is second only to respiratory tract infection in the use of antibiotics. It is an international priority to rationalise antibiotic use in primary care given the dangers of antibiotic resistance and the evidence that prescribing in primary care is likely to be a key driver of antibiotic resistance.¹ The trial by Kronenberg and colleagues² is therefore a welcome addition.³

The results show that an initial prescription for antibiotics is superior to NSAIDs for symptomatic management and inferior in terms of net antibiotic usage. However, the difference in symptom control may not be as stark as the 27% absolute difference in symptom resolution by day 3 would suggest, since the reduction in symptom score by day 3 in the NSAID group was 70% of the effect in the antibiotic group (diclofenac -7.3;

The short term benefits of antibiotics must be balanced against the longer term harms

norfloxacin -10.3) and quality of life was reasonably well maintained using diclofenac (8.8 v 9.4 on the EuroQol health state). NSAIDs may be supporting a useful improvement in symptom control as an alternative to initial use of antibiotics.

Of more concern were the findings that a larger number of women in the NSAID group had prolonged illness (12% more with unresolved symptoms at 7 days) and had more pyelonephritis (5% v 0%)—a higher difference than in a previous German study using ibuprofen (2% v 0.4%).³ Is a 5% complication rate in the NSAID group what might be expected anyway from no initial antibiotic treatment? Probably not: among previous placebo controlled studies, one reported that 1/38 of the placebo group developed pyelonephritis,⁴ whereas another reported

1/288.⁵ Combining these suggests a risk somewhere near 0.6% for placebos. Thus NSAIDs may not be just neutral in their impact on the progression of infections but actively harmful, presumably by interfering with the inflammatory element of the host's defences.

This is supported by emerging evidence from other infections: trials and case-control studies suggest that prolonged illness or the complications of respiratory infections may be more common when NSAIDs are used.⁶⁻⁹

Does this mean that to help reduce antibiotic use we should not use NSAIDs at all in managing UTIs? Here we are caught between the short term disadvantage of worse symptom control for women managed without antibiotics and the longer term harms from antibiotic resistance, including poorer symptom control, when using antibiotics routinely.

Resistance among urinary tract pathogens is clearly related to an

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38%, $P=0.98$ for non-inferiority, $P<0.001$ for superiority). Compared with antibiotic treatment, symptomatic treatment with diclofenac increased median symptom duration by two days and was likely to be associated with an increased risk of clinically diagnosed pyelonephritis. Antibiotic consumption was, however, reduced by 37% (28% to 46%, $P<0.001$ for superiority) in patients assigned to diclofenac. The trial was terminated prematurely because of difficulties in patient recruitment, but it had sufficient statistical power to examine the primary outcome.

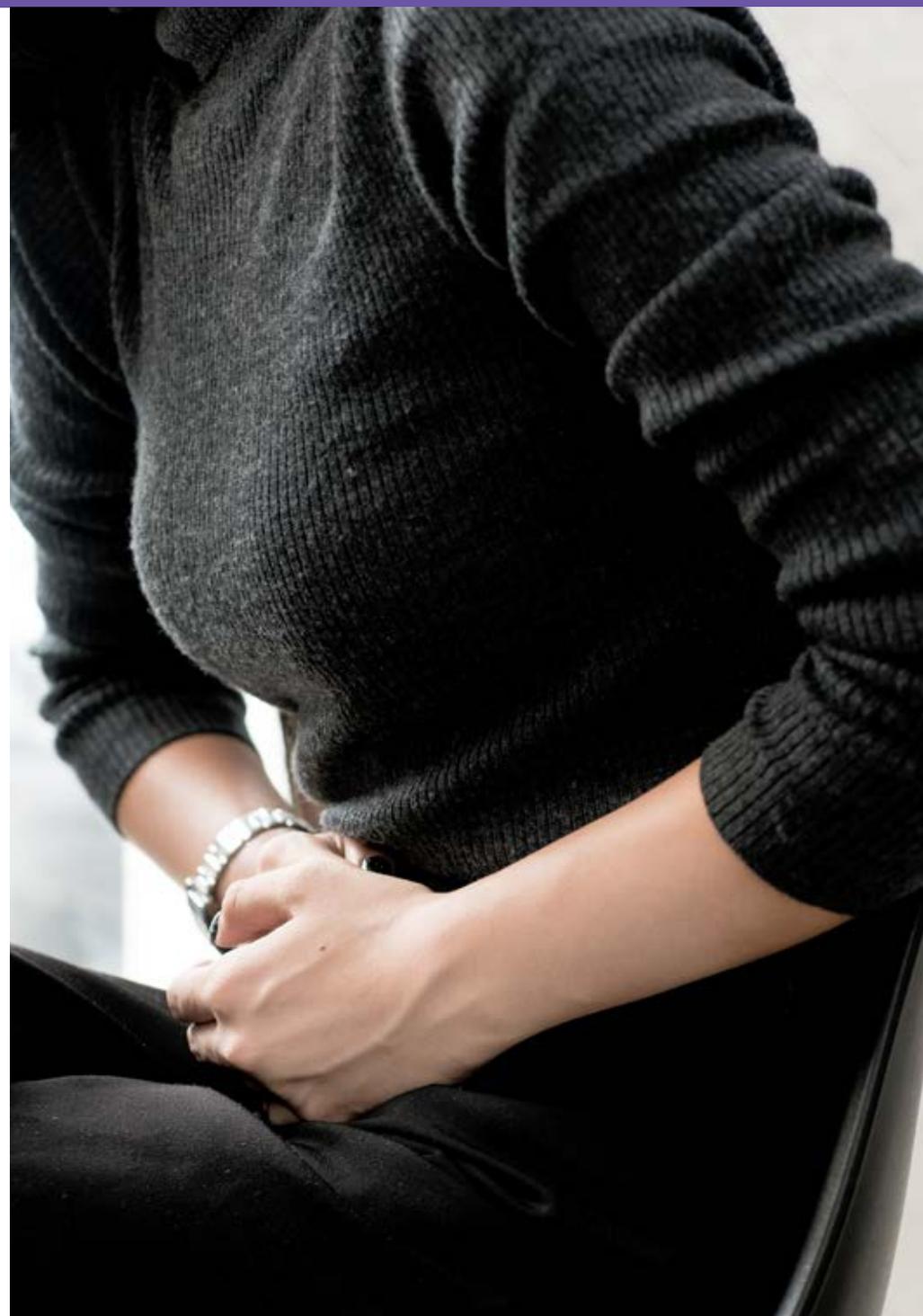
What this paper adds Although uncomplicated lower UTI may resolve with diclofenac treatment instead of antibiotic treatment, symptom duration is likely to be prolonged and the risk of pyelonephritis increased with diclofenac treatment.

Funding, competing interests, data sharing Swiss National Foundation, Swiss Academy of Medical Sciences, SwissLife foundation, Else Kroener-Fresenius foundation. No competing interests for this study. Anonymised patient level data are available from the corresponding author. **Trial registration** ClinicalTrials.gov NCT01039545.

individual's past use of antibiotics, is relatively common for many of the antibiotics used to treat UTI, such as trimethoprim, and results in much more prolonged symptoms.^{10,11} So even for symptom management the short term benefits of antibiotics must be balanced against the longer term harms.

Therapeutic dilemma

What can women and their clinicians do in practice? Paracetamol could be used more regularly as the first line analgesic in infections since it seems to be associated with a lower risk of adverse outcomes.⁶ When advocating an NSAID clinicians could consider advising women to take ibuprofen rather than diclofenac because in the previous larger study, which used ibuprofen, pyelonephritis occurred less often.³ NSAIDs could also be used more sparingly: the current study shows that in an efficacy trial where drugs are taken regularly, harm may ensue, but it has



not shown that intermittent use, more likely in everyday practice, is necessarily harmful.

Clinicians can also issue a delayed antibiotic prescription—giving women rapid access to antibiotics if symptoms do not improve within 48 hours, or get worse. Delayed prescriptions did not increase the risk of complications in a recent trial.¹² However, the use of a delayed prescription alone for a UTI is only likely to result in a 20-25% reduction in antibiotic use,¹² unlike the larger effect in respiratory tract infections.

More evidence to inform best practice is necessary, but in the meantime a pragmatic strategy of using paracetamol regularly, ibuprofen when necessary, and backed up with a delayed antibiotic prescription using a drug with a low resistance profile (eg, nitrofurantoin) could potentially balance competing needs to reduce antibiotic consumption, provide reasonable symptom control, and minimise the risk of complications.

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A three-talk model for shared decision making

Elwyn G, Durand MA, Song J, et al

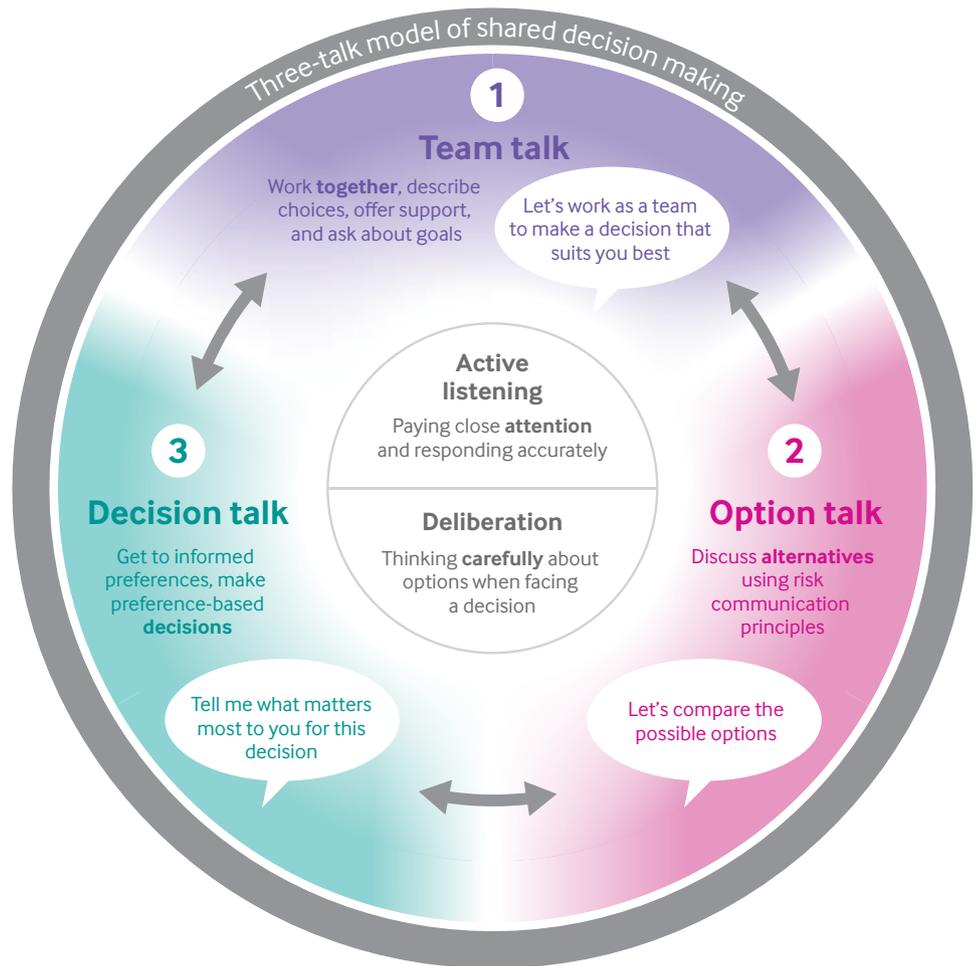
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Study question What revisions and improvements are needed to the three-talk model 2012 for shared decision making?

Methods The authors used a multistage consultation process by receiving suggestions and amendments from 19 key informants, integrating 153 member responses from multiple communities of interest, and making adjustments after receiving 316 responses to an online survey administered to medically qualified clinicians from six specialties.

Study answer After extended consultation over three iterations, the authors revised the three-talk model by making changes to one talk category, adding the need to elicit patient goals, providing a clear set of tasks for each talk category, and adding suggested scripts to illustrate each step. A new three-talk model of shared decision making is proposed, based on “team talk,” “option talk,” and “decision talk,” to depict a process of collaboration and deliberation. Team talk places emphasis on the need to provide support to patients when they are made aware of choices, and to elicit their goals as a means of guiding decision making processes. Option talk refers to the task of comparing alternatives, using risk communication principles. Decision talk refers to the task of arriving at decisions that reflect the informed preferences of patients, guided by the experience and expertise of health professionals.



What this study adds The revised three-talk model of shared decision making represents a wider consensus about the conversational stages of skillful collaboration and deliberation with patients, initiated by providing support when introducing options, followed by

strategies to compare and discuss trade-offs, before arriving at decisions based on informed preferences.

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