

Preventing rheumatoid arthritis: a general population pilot study of perspectives on potential preventative interventions

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BACKGROUND

- Evidence suggests treating people at high risk of rheumatoid arthritis (RA) with disease modifying anti-rheumatic drugs (DMARDs) could prevent the onset of disease.
- There are currently multiple ongoing randomized controlled trials studying the efficacy of preventing RA, for example:
 - Rituximab, a biologic DMARD
 - Hydroxychloroquine, a non-biologic DMARD.
- Even if these trials successfully meet their primary endpoint and are considered successful, the demand by asymptomatic people for preventative treatment is unclear because of:
 - Uncertainty in the precise benefits/harms of treatment, as well as the convenience of treatment
 - Uncertainty in the ability to predict those at risk of RA

OBJECTIVE

To determine the features of a preventative treatment program for people at high risk of RA that is likely to drive demand in presymptomatic people.

PREFERENCE ELICITATION DESIGN

- We focus on preferences for treatment, the values and most important attributes of preventative treatment programs, and the likely uptake of preventative treatment.
- Discrete choice experiment (DCE) where respondents were:
 - told to imagine a test had classified them as at high risk of developing RA.
 - asked to choose between sets of 2 hypothetical preventative RA treatments, then between their preferred treatment and 'no treatment for now'.

The treatment attributes identified in focus groups with RA patients, first-degree relatives of RA patients and rheumatologists, were:

- 1. risk of developing RA,
- the way treatment is taken,
- chance of side effects,
- 4. certainty in estimates,
- 5. health care provider's opinion
- Respondents were also given a background scenario which described the chance that the test is wrong.
- Experimental design (SAS) developed 18 choice sets, blocked into 4 sets of 9 choices.

	METHODS & ANALYS	SIS	
 The DCE was given to Responses were anal importance of attribution Potential uptake of the 	a representative sample of the US general popu yzed using a conditional logit regression model to ites in influencing preferences. ne treatment was estimated using the opt-out qu	lation via a market research panel. to estimate the significance and relative lestion in part 2 of the survey	
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Your ris	k of developing rheumatoid arthritis
The way	y you take the treatment
Chance	of side effects
Certaint	ty in estimates
Your he	alth care provider's opinion

Stay with selected treatment Choose no treatment

Figure 2. Estimated preferences and marginal rates of substitution for different aspects of preventative treatment

Ref: HCP does not prefer this option

Ref: RA risk reduced from 60/100 to 44/100 Risk reduced from 60/100 to 34/100 Risk reduced from 60/100 to 24/100

Ref: Infusion (twice, 3-4hrs, 15 days apart) Injection (once per week for a year)

Ref: Side effects (minor: reversible: major: rare, irreverisble) Side effects (minor: reversible; major: rare, reverisble)

Ref: Very little certainty (true effect likely different to estimate) Limited certainty (true effect may be different to estimate) Moderate (true effect likely to be close to estimate)

No treatment
Your predicted risk will stay the same at 60 people out of 100.
You don't take anything
None
High: The true effect is likely to be close to the estimate of the effect.
Your health care provider <i>does not offer an opinion</i> about this option.









SAMPLE

- 201 respondents started and completed all tasks in the survey.
- The majority were 25-54 years old (modal 30-39 years (38%)), and 50% female.
- 23 members (11%) reported having a physician diagnosis of RA, and 91 (45%) had a family member or close friend with RA.

RESULTS

Discrete Choice Experiment

- All attributes' levels significantly influenced treatment preferences, but the risk reduction, the way treatment is taken, and health care provider's preference were most influential
- Respondents were most willing to trade a reduction in risk of RA for a treatment preferred by their health care professional and an oral route of administration.
- Respondents had similar strength preferences for reducing uncertainty in evidence and reducing risks of side effects.
- The preferred preventative treatment was chosen over no treatment in 67% of choices.

Potential uptake

• Across the 9 choices we asked people to make, when asked whether they would choose no treatment over there preferred treatment, between 24% and 49% preferred no treatment.

Survey

- 87% of respondents would be willing to pay something out of pocket for a preventative treatment (41% maximum \$200; 39% maximum \$1000; 7% maximum \$5000)
- Only 9% believed that preventative treatment should be paid out of pocket; 60% believed that insurance providers should pay, 28% believed the government or health care system should pay

CONCLUSIONS

- The general population values the potential benefits of preventative treatments, but equally values how the treatment is taken and the preference of their health care provider, highlighting the importance of agency and perceived asymmetry of information.
- The degree of confidence in a treatment's risk/benefit estimates is as important to people as the risk of side effects.
- The uptake of a preventative strategy will depend on these key factors.
- Evidence from a full survey will help policymakers understand whether different preventative treatment strategies are likely to be acceptable to people to whom they are offered.

Part 2: Would you choose no treatment for now, over your chosen treatment above?

	No treatment
Your risk of developing	Your predicted risk will stay the same at <u>60</u> people out of 100.
rheumatoid arthritis	
The way you take the treatment	You don't take anything
Chance of side effects	None
Certainty in estimates	High: The true effect is <u>likely to be close</u> to the estimate of the effect.
Your health care provider's opinion	Your health care provider <u>does not offer an</u> opinion about this option.

I choose to:

O Stay with selected treatment

Choose no treatment

Imagine that you have taken a test to predict your risk of developing rheumatoid arthritis (RA), and these are tl Imagine that you have taken a test to predict your risk of developing rheumatoid arthritis (RA), and these are the results:

. • Risk of developing rheumatoid arthritis in the next 5 years: 60% (60 out of 100 people like you are expected to develop RA)

. t · Chance that the test is wrong: 20% (20 out of 100 people are expected to get inaccurate information from this test)

It ^r Imagine you are now offered the choice between two treatments which could prevent you developing rheumatoid arthritis. Both are thought to be appropriate, but differ in a number of ways.

Part 1: choose your preferred treatment.

<u>Click here</u> if you are unsure what to do.

Treatment A

Your risk of developing rheumatoid arthritis	Your predicted risk of RA would reduce from <u>60</u> of 100 to <u>44 people out of 100</u> over the next 5 y
The way you	<u>IV/slow drip</u> , given by a physician or nurse at th
take the	hospital, which takes 3-4 hours / <u>Twice, 15 days</u>
treatment	repeated once (2 doses total).
Chance of side	<u>Common:</u> minor side effect which is <u>reversible</u>
effects	<u>Very rare:</u> very serious side effect which is <u>not re</u>
Certainty in	Very little: The true effect is <i>likely to be substar</i>
estimates	<u>different</u> from the estimate of effect.
Your health care provider's opinion	Your health care provider would <u>not prefer</u> this t
I prefer:	\bigcirc

Treatment B

<u>) people out</u> years.	Your predicted risk of RA would reduce from <u>60 people out</u> <u>of 100</u> to <u>24 people out of 100</u> over the next 5 years.
heir office or <u>'s apart,</u>	An <u>oral pill</u> / <u>Once daily</u> for one year.
reversible.	Common: minor side effect which is reversible
intially	Limited: The true effect may be substantially different from the estimate of the effect.
treatment.	Your health care provider would prefer this treatment.