Will Australian men use male hormonal contraception? A survey of a postpartum population

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ABSTRACT

Aim: To survey the attitudes of a population of Australian men to potential use of male hormonal contraception (MHC).

Design: Survey of male partners of women who had recently given birth. Men were approached while visiting their female partners on the ward.

Participants: 118 out of 148 Australian-born English-speaking men who were approached.

Setting: Postnatal ward of Monash Medical Centre (a public teaching hospital in Melbourne), between October 2000 and April 2001.

Main outcome measure: Attitudes towards potential use of MHC, rated on a five-point scale.

Results: 89/118 men surveyed (75.4%; 95% CI, 67.7%–83.2%) indicated that they would consider trying MHC if it were available. The three most popular choices for method of administration of MHC were (in descending order) an oral pill, a three-monthly injection, or a two-yearly injection. A statistically significant association was found between acceptability of vasectomy and acceptability of MHC (70.5% of men who indicated they would try MHC [MHC "triers"] found vasectomy acceptable versus 44.5% of MHC "non-triers"; $P = 0.011$). Triers reported a higher rate of approval of MHC by their female partners than non-triers (79.8% v 13.8%, respectively; $P < 0.0001$).

Conclusions: MHC appears to be acceptable to a majority of Australian men when surveyed in a postpartum context. Attitudes of men towards existing male contraception, as well as the attitudes of their partners, appear to exert a strong influence on acceptability of MHC.

MJA 2002; 176: 208–210

PROVIDING A WIDE RANGE of effective, convenient and safe contraceptive methods should be seen as a major priority in a world in which overpopulation is a critical issue. Unfortunately, no method of contraception is perfect, and many couples are dissatisfied with currently available methods.[1] A commercially available male hormonal contraceptive is coming closer to reality, potentially expanding the range of options available for fertility control.

Several combinations of drugs have been used to suppress spermatogenesis for contraceptive purposes. All combinations have included weekly intramuscular injections of testosterone to cause azoospermia or severe oligospermia ($\leqslant 3 \times 10^6$ sperm/mL), by suppressing production of luteinising hormone and follicle-stimulating hormone by the pituitary. Weekly testosterone injections have been proven effective in preventing conception, with one study reporting a rate of 1.4 pregnancies per 100 person-years.[2] Other studies have shown testosterone to be more effective in preventing spermatogenesis when combined with a progestogen.[3,4]

One of the more practical issues is what sort of potential demand there might be for a commercially available preparation. There have been few surveys attempting to address this question. The largest of these surveys, reported by Martin et al,[5] showed significant cultural differences in potential uptake of male hormonal contraception (MHC), not only between black Africans and Chinese men, but also between whites from Scotland and whites from South Africa.

As, to our knowledge, no study has been conducted to ascertain the potential uptake of MHC among Australian men, we carried out a survey of male partners of women in a postpartum obstetric population to gauge their attitudes to MHC.

METHODS

Between October 2000 and April 2001, in the postnatal ward of Monash Medical Centre (a public teaching hospital), we approached male partners of women who had recently given birth to a live baby. The men were asked to complete a questionnaire on their use of contraception and their attitudes to the potential use of MHC. Only English-speaking men born in Australia were eligible for the study.

Participants were given a brief information sheet introducing the idea of MHC, but no further verbal information. The information sheet mentioned that, to ensure MHC was effective, treatment could take 3–4 months and require taking one or more semen samples, and that, although sperm production would be switched off, sexual performance would not be affected. No further information on safety or efficacy was provided, as this survey sought attitudes based on existing knowledge of this contraceptive method, which has received much media attention in recent years.

After informed consent was obtained, participants were given a three-page questionnaire to complete. The survey asked about demographic details, past use of contraception and intended future

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1: Likelihood of Australian men trying MHC (*n*=118)

Would you try MHC?	Number of men	% (95% CI)
Definitely	23	19.5% (12.4%, 26.7%)
Probably	33	28.0% (19.9%, 36.1%)
Maybe	33	28.0% (19.9%, 36.1%)
Probably not	14	11.9% (6.1%, 17.7%)
Definitely not	15	12.7% (6.7%, 18.7%)

MHC = male hormonal contraception.

use of contraception. Participants were also questioned on attitudes to condom use and vasectomy. Finally, subjects were asked to rate, on a five-point scale, the likelihood of their trying MHC if it were commercially available. They were also asked what mode of treatment would most suit them (daily oral pill; weekly, monthly, three-monthly, or two-yearly injection; or skin patch), and whether or not their partner would be happy with them trying this form of contraception.

Statistical analysis for significance was by univariate χ^2 analysis for categorical variables, and Student's *t*-test for continuous variables, using the software package STATA (Stata Corp, Texas).

Ethical approval for the survey was obtained from the Human Research Ethics Committee B at Monash Medical Centre.

RESULTS

The response rate was high (124/148 [83.8%]). Of the 124 respondents, six were excluded, as they failed to answer the key question of whether or not they would try MHC.

In our survey, 89/118 participants (75.4%; 95% CI, 67.7%–83.2%) indicated that they would "maybe", "probably" or "definitely" try MHC. These we classified as "triers". We included men responding with "maybe" among the triers, as this seemed the best way to isolate "non-triers" (men who would most likely *not* try MHC) from the other participants. Only 29/118 (24.6%; 95% CI, 16.8%–32.4%) indicated that they would "probably not" or "definitely not" try MHC if it was available (see Box 1).

An analysis of the preferred mode of administration of MHC for triers showed that the top three choices (in order) were a daily oral pill, a three-monthly injection, and a two-yearly injection (Box 2). The only proven efficacious regimen of testosterone for contraception (weekly testosterone injections) was the least popular (1/84 [1.2%]).

The three contraceptive methods most commonly used in the past — condoms, the oral contraceptive pill and withdrawal — were the same among triers and non-triers (Box 3). In most cases (105/118 [89.0%]), both partners decided on contraceptive issues together. Most respondents appeared to be happy with the method of contraception they had most recently used.

Triers tended to have a higher education level than non-triers, while a smaller proportion of triers claimed to practise a religion than non-triers, although these differences were not statistically significant. There was no significant difference between the two groups in age, number of children, or proportion of respondents claiming to have "completed their family".

There was no difference in condom acceptability between MHC triers and non-triers. However, men who indicated that they would consider trying MHC were more likely to find the idea of vasectomy acceptable than non-triers (70.5% v 44.5%, respectively) (Box 3). This was despite the fact that a similar proportion of men in both groups indicated their intention to use vasectomy in the near future. A question asking which of two sterilisation options would be selected by the couple if such a choice was necessary (a rather contrived situation) revealed that similar proportions of men in the two groups would choose vasectomy. In other words, many non-triers would only consider vasectomy if forced to choose between vasectomy for themselves or tubal ligation for their female partners.

A large proportion of men who would not try MHC believed that their partner would not be happy with them trying it (48.3%), while a large majority of triers (79.8%) believed that their partners would approve. A larger proportion of non-triers (37.9%) than triers (19.1%) were unable to gauge the attitude of their partner to the concept of MHC.

DISCUSSION

The likely uptake of MHC appeared to be quite high in our survey (75.4%), a figure consistent with the results of the largest survey to date.[5] However, if we had restricted the definition of MHC triers to those who indicated they would definitely or probably try MHC, the rate of likely uptake would have been reduced to 47.4%. This would mean that the true uptake of MHC based on our survey would be somewhere between 47.4% and 75.4% in this population. Our survey population was a convenience sample of male partners of postpartum women. Other published surveys of attitudes to MHC[6] have also used convenience sampling.

Interestingly, the top three preferred modes of administration of MHC nominated by the respondents (a daily oral pill, a three-monthly injection or a two-yearly injection) have a close parallel to female contraceptive options (the combined oral contraceptive pill, depo medroxyprogesterone acetate, and implantable progestogens, respectively).

An obvious criticism of our study is that the population surveyed might be biased towards acceptance of male contraceptive use during the period of elation surrounding the arrival of a new baby. However, in the survey of 1829 men by Martin et al,[5] there was no difference in attitude to MHC in new fathers compared with other men.

2: Preferred mode of MHC use for "triers" (ie, men who would "definitely", "probably" or "maybe" try MHC) (*n*=84*)

Preferred mode of MHC use	Number of men	% (95% CI)
Oral pill (daily)	28	33.3% (23.2%, 43.4%)
3-Monthly injection	23	27.4% (17.9%, 36.9%)
2-Yearly injection	18	21.4% (12.6%, 30.2%)
Monthly injection	11	13.1% (5.9%, 20.3%)
Skin patch	3	3.6% (–0.4%, 7.6%)
Weekly injection	1	1.2% (–1.1%, 3.5%)

MHC = male hormonal contraception.
* Of 89 "triers", 5 did not answer this question.

3: Demographics, contraceptive use and attitudes of men who were potential "triers"* or "non-triers"† of MHC. Significant results in bold.

	"Triers"* (n = 89)	"Non-triers"† (n = 29)	P ‡
Mean age (years)	31.8 (95% CI, 30.6–33.0)	30.1 (95% CI, 28.4–31.8)	0.16
Number of children (mean)	1.5 (95% CI, 1.4–1.7)	1.6 (95% CI, 1.3–1.9)	0.87
Education level			
Did not complete high school	24.7%	41.4%	0.09
Completed high school	43.8%	37.9%	0.09
Had tertiary education	31.5%	20.7%	0.09
Family complete			
Yes	22.7%	24.1%	0.46
No	37.5%	44.8%	0.46
Unsure	39.8%	31.1%	0.46
Religion listed	47.2%	62.1%	0.16
Regular religious service attendance	9.1%	17.2%	0.22
Past contraceptive use (ever)			
Condom	78.7%	72.4%	0.49
Pill	87.6%	89.6%	0.77
Depo provera injection	10.1%	6.9%	0.73
IUD	1.1%	0	1.00
Diaphragm	1.1%	0	1.00
Withdrawal	28.1%	31.0%	0.76
Rhythm/natural methods	0	6.9%	0.06
Vasectomy	1.1%	0	1.00
Most recent contraceptive method used			
Condom	33.0%	21.4%	0.22
Pill	45.4%	44.8%	0.99
Depo provera injection	4.5%	3.6%	1.00
IUD	0	0	
Diaphragm	0	0	
Withdrawal	11.2%	21.4%	0.20
Rhythm/natural methods	3.4%	3.6%	1.00
Happy with recent contraceptive method	78.7%	80.0%	0.94
Who makes decisions on contraception?			
Female partner alone	11.2%	3.4%	0.77
Male partner alone	1.1%	6.9%	0.77
Both partners together	87.7%	89.7%	0.77
Future contraceptive method of choice			
Condom	47.7%	37.9%	0.38
Pill	**56.9%**	**34.5%**	**0.03**
Depo provera injection	1.1%	6.9%	0.15
IUD	0	0	
Diaphragm	0	0	
Withdrawal	10.2%	3.4%	0.45
Rhythm/natural methods	1.1%	6.9%	0.15
Vasectomy	9.1%	10.3%	1.00
Tubal ligation	4.5%	0	0.57
None/unsure	12.5%	10.3%	0.77
Condom use "acceptable"	65.9%	65.5%	0.94
Vasectomy "acceptable"	**70.5%**	**44.5%**	**0.01**
Preferred sterilisation method "if needed"			
Vasectomy	73.3%	78.3%	0.50
Tubal ligation	26.7%	17.4%	0.50
Unsure/no answer	0	4.3%	0.50
Partner happy with respondent trying MHC			
No	1.1%	48.3%	<0.0001
Yes	**79.8%**	**13.8%**	**<0.0001**
Unsure	19.1%	37.9%	<0.0001

MHC = male hormonal contraception. IUD = intrauterine device. * "Triers" were defined as men who would "maybe", "probably" or "definitely" try MHC. † "Non-triers" were defined as men who would "probably not" or "definitely not" try MHC. ‡ P values were derived from Student's t-test (for difference in means in age and number of children) and χ^2 tests or Fisher's exact test, as appropriate, for categorical variables.

Our study had insufficient power to detect many differences in demographic characteristics between the groups. Despite this, we found a statistically significant correlation between potential MHC uptake and acceptability of an existing major male contraceptive method (vasectomy), as well as a marked difference in the male perception of attitudes of their partners.

The strong correlation between willingness to try MHC and acceptance of vasectomy suggests that there is a population of men who are either more willing to take an active role in controlling fertility or are forced to consider male methods of contraception because of the unacceptability or failure of female methods of contraception.

Almost half of non-triers felt their partners would not approve of MHC use, and 80%–90% of the couples surveyed make their contraceptive choices together, suggesting that attitudes of the female partner have a strong influence on the likelihood of the male partner taking up MHC.

Our survey suggests that Australian men may be receptive to the idea of using male hormonal contraception.

COMPETING INTERESTS

The authors acknowledge no conflict of interests in the performance of this study. Gareth C Weston is funded by an NHMRC Medical Postgraduate Scholarship.

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(Received 22 Jun, accepted 4 Dec 2001) ❑