



Depression associated with combined oral contraceptives

A pilot study

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Over one-quarter (27%) of Australian women aged 18–49 years use oral contraception (47% in women aged 20–24 years).¹ They are the primary method of choice for 40% of women (71% aged 20–24 years).¹ Although there have been numerous studies investigating the relationship between the use of oral contraceptives and depressive symptoms, they have differed widely in both their methods and findings.² A particular problem is determining and quantifying depression. We conducted a pilot study using well validated depression rating scales.

Method

We recruited 58 healthy women from the general public aged 18–50 years; able to give informed consent; neither pregnant nor lactating; with no history or family history of depression; who had taken no psychotropic medication in the previous 12 months; and had experienced no recent major social or adjustment adverse event (as defined objectively³). Twenty-six women were current users of combined oral contraceptives (COC) and the rest (32) were not, nor had used them for at least 2 months.

Participants were interviewed twice (2 weeks apart) and scores were averaged to smooth any possible influence of menstrual phase on mood. Assessment tools included three depression rating scales: Beck Depression Inventory (BDI),⁴ Hamilton Rating Scale for Depression (HAM-D)⁵ and Montgomery-Asberg Depression Rating Scale (MADRS).⁶ A clinician rated assessment tool, the Global Assessment

of Functioning (GAF) Scale,⁷ was used to provide an overall measure of psychiatric symptoms and the level of social functioning.

The Alfred Research and Ethics Committee approved the project.

Results

The two groups were similar in terms of basic demographics such as age, age of menarche, and education level (data not shown). Analysis of variance (ANOVA) showed that self reported symptoms of depression were significantly higher among COC users than nonusers (*Table 1*). The GAF scores were significantly lower, suggesting greater social disability in users than the nonusers, although the mean scores of both groups were in the normal range. The mean scores on two of the three depression inventories (BDI, MADRS) for COC users suggested mild depression, compared to nonusers group whose scores were normal.

Discussion

The results from this study suggest that the COC users or recent users might be more vulnerable to depression. Although we used three validated self report measures to provide an objective assessment of depression, the pilot study has several limitations: the small sample size; the possibility of responder bias because participants were recruited by advertisement (for example perhaps the study attracted women with negative experiences of the pill); and the large variation in duration type of combined oral contraceptive used. Future studies should

Table 1. Mean depression scores for the COC and non-COC users groups

Rating scale	Mean (standard deviation)		
	COC	Non-COC	<i>p</i>
† GAF	75.6 (12.3)	85.1 (7.6)	0.001
* MADRS	9.2 (7.3)	4.1 (3.8)	0.001
* HAMD	10.0 (6.7)	5.2 (3.4)	0.001
* BDI-II	9.7 (6.6)	5.9 (4.6)	0.011

* Higher scores indicate worse depressive symptoms; † higher scores indicate better social function

address these limitations in a larger study that controls for confounding variables.

Conflict of interest: the study was financially supported by The Alfred Psychiatry Research Centre, Alfred Hospital. There were no competing interests.

References

1. Australian Bureau of Statistics. Australian Social Trends 1998. Family formation: family planning. Available at: www.abs.gov.au/Ausstats/abs@nsf3a6be08dcac76b81ca2569ad000402a8?OpenDocument.
2. Oinonen K, Mazmanian D. To what extent do oral contraceptives influence mood and affect? *J Affect Disord* 2002;70:229–40.
3. Holmes T, Rahe R. The social adjustment rating scale. *J Psychosom Res* 1967;11:213–8.
4. Beck A, Steer R, Brown G. Manual for Beck Depression Inventory–II. San Antonio, TX: Psychological Corporation, 1996.
5. Hamilton M. A rating scale for depression. *J Neurol Neurosurg Psychiatry* 1960;23:56–62.
6. Montgomery S, Asberg M. A new depression scale designed to be sensitive to change. *Br J Psychiatry* 1979;134:382–9.
7. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. Washington, DC: American Psychiatric Association, 1994.

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