BRITISH MEDICAL JOURNAL

SATURDAY 9 JANUARY 1971

LEADING ARTICLES

PAPERS AND ORIGINALS

MEDICAL PRACTICE

NO. 5740 BRITISH MEDICAL JOURNAL 1971 VOLUME 1 61-124 WEEKLY PRICE 7s
BRITISH MEDICAL ASSOCIATION TAVISTOCK SQUARE LONDON WC1H 9JR TELEPHONE 01-387 4499

CORRESPONDENCE

Correspondents are asked to be brief

Oral Contraceptives and Cerebral Arterial Occlusion

SIR,—In view of the suspected causal relationship between the intake of oral contraceptives and cerebrovascular disease[1 2] we have examined the case records of women aged between 18 and 45 suffering from angiographically proved cerebral arterial occlusions treated at this hospital between July 1965 and August 1969. Our study is a follow-up of the report by Illis *et al.*,[3] which covered the previous four and a half years. As in that report, only radiologically confirmed cases have been considered. Clinical details have been reviewed and note made of any history of the use of contraceptives, which had been the subject of routine inquiry during the relevant period, and of any factors that might predispose to cerebrovascular disease.

Cerebral arterial occlusion was confirmed by angiography in 12 women aged between 18 and 45 years. One patient had mitral stenosis with renal and cerebral emboli, while another was puerperal. The remaining ten were free from evidence of hypertension or previous occlusive vascular disease. Four of the ten were known to be taking oral contraceptives at the time of their neurological illness. It was noteworthy that four of the five patients aged below 40 were on the "pill," compared with none of the five above this age. A control group is difficult to obtain but market research data (personal communication, M. P. Vessey) suggest that not more than one of the ten women would have been expected to be taking oral contraceptives.

Most published series show a similar association (see Table) though none was found by Jennett and Cross.[7] The studies by Vessey and Doll[1] and by Inman and Vessey[2] included data on a control population and the association between cerebrovascular disease and oral contraceptives was shown to be statistically significant.

The temporal distribution of the present cases and those reported by Illis *et al.*[3] shows that the incidence of angiographically proved arterial occlusions in women of child-bearing age has not increased during the period covered by the two studies. Schoenberg *et al.*[9] also noted that the annual incidence of occlusive cerebrovascular disease in young women had not increased since the introduction of oral contraceptives.

It thus seems that a definite relationship between oral contraceptives and occlusive cerebrovascular disease is likely but is still not proved. Possibly oral contraceptives may reduce the number of pregnancies that would otherwise have been complicated by strokes[8] and that they are to a certain extent replacing pregnancy as a risk factor.—We are, etc.,

Authors	Diagnostic Criterion	No. of Cases	No. on Pill
Vessey and Doll[1] ..	Clinical	19	11
Inman and Vessey[2] ..	Death Certificate	10	5
Illis *et al.*[3]	Angiography	18	4
Bickerstaff and Holmes[4]	Clinical	25	18
Heyman *et al.*[5] ..	Clinical	19	10
Bergeron and Wood[6]	Angiography	9	8
Jennett and Cross[7] ..	Angiography/ Necropsy	26	1

M. J. G. HARRISON
L. S. ILLIS
P. D. LEWIS
W. I. MCDONALD
R. S. KOCEN

National Hospital for Nervous Diseases, London W.C.1

1 Vessey, M. P., and Doll, R., *British Medical Journal*, 1969, 2, 651.
2 Inman, W. H., and Vessey, M. P., *British Medical Journal*, 1968, 2, 193.
3 Illis, L. S., Kocen, R. S., McDonald, W. I., and Mondkaer, V. P., *British Medical Journal*, 1965, 2, 1164.
4 Bickerstaff, E. R., and Holmes, J. M., *British Medical Journal*, 1967, 1, 726.
5 Heyman, A., Arons, M., Quinn, M., and Campbell, L., *Neurology*, 1969, 19, 519.
6 Bergeron, R. T., and Wood, E. H., *Radiology*, 1969, 92, 231.
7 Jennett, W. B., and Cross, J. N., *Lancet*, 1967, 1, 1019.
8 Cross, J. N., Castro, P. O., and Jennett, W. B., *British Medical Journal*, 1968, 3, 214.
9 Schoenberg, B. S., Whisnant, J. P., Kurland, L. T., and Kempers, R. D., *Neurology*, 1969, 19, 291.

Bacteriuria in Pregnancy

SIR,—Your editorial on treatment of bacteriuria in pregnancy (12 December, p. 631) describes disc-diffusion tests for determining the sensitivities of urinary pathogens to sulphonamides as being unsatisfactory. Such tests are often very badly done.[1] There are two main reasons for this: either the bacterial inoculum is too heavy; or media containing para-amino-benzoic acid are used. Both these technical errors (which apply equally to tube-dilution techniques) result in sensitive strains being reported as resistant. Such errors are readily avoided by (1) the use of appropriate media, free of para-amino-benzoic acid, (2) the control of inoculum density, and (3) the use of a known sensitive control organism in parallel with every test. Using such methods the results of sulphonamide sensitivity tests are reliable. In a published series which you quote,[2] the results of 60 sulphonamide disc-diffusion sensitivity tests were confirmed by a tube-dilution technique in all cases. Since the tube-dilution techniques have the same sources of error as the disc-diffusion methods, they are no more "satisfactory" than the latter. They do, however, measure the degree of sensitivity of the organism to the sulphonamide.

Your editorial rightly makes a plea for the detection and treatment of bacteriuria in pregnancy but in doing so has fallen into error. In order to emphasize possible geographical variations in the sulphonamide sensitivity of urinary pathogens a comparison is made of series published by Williams and Smith[3] and by Grüneberg and Brumfitt.[2] The first series dealt with bacteriuria in pregnancy, and the latter with acute symptomatic urinary tract infection in general practice. The cure rates in these two series were 55% and 88%. It has been shown that bacteriuria is easier to eradicate in patients in general practice than in pregnant women,[4 5] whatever treatment is used, including conventional regimens of sulphonamides. Apart from host factors, this difference is partially due to a higher proportion of sulphonamide resistant orga-