an extreme example of its kind. An alternative explanation might be that thalidomide has a blocking effect upon one or more of the adrenal cortical enzymes concerned with cortisol synthesis. The raised urinary 17-hydroxycorticoid excretion would then result from an attempt by the pituitary-adrenal axis to compensate for the deficiency of cortisol, as happens in some forms of congenital adrenal hyperplasia, or after giving the adrenal inhibitor 2-methyl-1,2-bis-(3-pyridyl)-1-propanone ("metopirone" SU 4885). The relatively low output of 11-oxy-17-hydroxycorticoids, the slightly raised pregnanetriol excretion, and the high urinary sodium/potassium ratios lend some support to this alternative. The hypoglycaemia would, on this basis, arise from a deficiency of glucocorticoids such as cortisol. Hypoglycaemia is known to occur in some forms of congenital adrenal hyperplasia and "metopirone" has been reported as lowering the fasting blood sugar (Fukushima *et al.*, 1960).

Whatever the causative mechanism, this effect of thalidomide upon the adrenal glands may be of importance in our understanding of the origin of the foetal abnormalities associated with the drug. It may perhaps be of relevance also to the reversible amenorrhoea that has been associated with the administration of thalidomide (Howe, 1961). We should therefore like to draw the attention of those engaged in this field to our findings.

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REFERENCES

- Alexander, I. R. W. (1961). *Brit. med. J.*, **2**, 1434.
 Florence, A. L. (1960). *Ibid.*, **2**, 1954.
 Fukushima, D. K., Gallagher, T. F., Greenberg, W., and Pearson, O. H. (1960). *J. clin. Endocr.*, **20**, 1234.
 Fullerton, P. M., and Kremer, M. (1961). *Brit. med. J.*, **2**, 855.
 Howe, P. (1961). *Ibid.*, **2**, 1084 and 1570.
 Lenz, W. (1961). *Dtsch. med. Wschr.*, **86**, 2555.
 Meade, B. W., and Rosalki, S. B. (1961). *Brit. med. J.*, **2**, 1223.

Staphylococcal Nasal Carriage and Wound Sepsis in Relation to ABO and Rh Blood Groups of Male Surgical Patients

It is still not known why some people carry *Staphylococcus aureus* in the nose and others do not. In general surgery it has been suggested that carriers of staphylococci are more prone to staphylococcal sepsis than non-carriers, but little is known of the factors that determine the occurrence of this sepsis in the individual carrier. In view of the association which has been described and generally accepted of blood groups and some diseases we report here an analysis of nasal carriage and wound sepsis due to *Staph. aureus* in male hospital in-patients in relation to their ABO and rhesus groups.

RESULTS

Some 4,000 patients, chiefly in surgical wards, have been studied in this hospital as part of the investigation of hospital infection since 1956 (Shooter *et al.*, 1958; Williams *et al.*, 1962). Routine determinations were made of ABO and Rh blood groups for 1,055 patients. Of these 1,055 patients, nasal swabs were taken from 892 on admission, and from all where possible at weekly

intervals as long as they remained in hospital. The Table shows the distribution of the patients between various blood groups. Both for patients swabbed on admission and for the whole series, the carriers show a slight excess of group O at the expense of group A. In neither case, however, does the level of significance approach 5% (χ^2 test). It is also clear from the Table

Blood Groups of Patients in Relation to Staphylococcal Nasal Carriage and Wound Sepsis

	Total No.	Percentage					
		O	A	B	AB	Rh +	Rh -
Whole series	1,055	46.1	42.0	9.2	2.7	81.7	18.3
Carriers on admission	333	49.2	37.8	9.7	3.3	82.6	17.4
Non-carriers on admission	559	44.9	42.9	9.9	2.3	80.0	20.0
Carriers at anytime	596	48.5	38.9	9.9	2.7	81.9	18.1
Never carriers	459	42.9	46.0	8.3	2.8	81.5	18.5
With staphylococcal wound sepsis	133	48.1	36.8	9.8	5.3	80.5	19.5

that the distribution of blood groups for the patients with sepsis does not differ significantly from that of any of the groups of carriers or non-carriers. All the distribution figures are in agreement with population figures. Coulter (1962) has also shown a slight excess of group O in carriers; his difference is significant at 5%.

We are indebted to Dr. H. F. Brewer for allowing us to consult his records of blood groups, to our colleagues on whose work in the past this analysis is based, to Mr. M. P. Curwen for statistical assistance, and to the Medical Research Council for a grant.

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REFERENCES

- Coulter, J. R. (1962). *Nature (Lond.)*, **195**, 301.
 Shooter, R. A., Smith, M. A., Griffiths, J. D., Brown, Mary E. A., Williams, R. E. O., Rippon, Joan E., and Jevons, M. Patricia (1958). *Brit. med. J.*, **1**, 607.
 Williams, R. E. O., Noble, W. C., Jevons, M. Patricia, Lidwell, O. M., Shooter, R. A., White, R. G., Thom, B. T., and Taylor, G. W. (1962). *Ibid.* In press.

"In purely industrial or commercial organizations the employee will presumably use such weapons as he can command to obtain the maximum financial reward for his services, employing in the last resort the sanction of wholly withdrawing his services unless his demands are met. This action can cause very great public inconvenience and can involve financial loss to society as a whole, but it is probably true to say that public opinion in general is more irritated than alarmed by a strike in industry even where such a strike may cause immense inconvenience, as for instance when a major public service is involved. Where, however, professional activities, particularly of a humanitarian or social kind, are involved, the position is very different. Until fairly recently it was virtually unheard of for those engaged in a profession to withdraw their services, and the comparatively recent actions of teachers were something new in English social history. Because, however, lack of education is regarded generally as something less dangerous, and certainly much less urgent, than lack of health the public were far less alarmed by the temporary closing of schools than they would be by any comparable closing of hospitals. The problem of assessing the value of services rendered, where there is no direct financial yardstick nor a tangible end-product, remains extremely difficult to resolve; nor will all the factors which are apparently considered for assessing the salaries of those engaged in social services ethically bear very close scrutiny." ("Spectator," in *The Hospital*, June, 1962.)