

# **The assessment by doctors of the effectiveness of drugs**

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**SUMMARY.** There was no significant difference between the assessments by two groups of randomly-selected general practitioners on the effectiveness of the drug treatment for 19 common clinical conditions. The treatment of simple iron deficiency anaemia was considered the most effective and gained the highest consensus. Least effective, but not matched by worst consensus, was the drug treatment for obesity. The most widespread disagreement among the practitioners was for the effectiveness of the drug treatment of gastroenteritis.

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## **Introduction**

A small number of common diseases may be attracting more than their expected share of the drug market. Drug companies are understandably attracted to those therapeutic groups where the drugs of their competitors are for one reason or another not completely satisfactory, especially if the relevant disease is also common. Psychotropic drugs come into this category; in 1974, for example, in England, they accounted for 27 per cent of all items prescribed through the National Health Service (D.H.S.S., 1974).

The availability of pharmaceutical preparations for a given purpose is a complex matter depending on marketing strategy, patent laws, and production costs. But it may be claimed that where there are several treatments for the same condition none is likely to be ideal, but where there is an ideal treatment there are usually a few options. It is understandable, therefore, when treatments are unsatisfactory, that a doctor is placed in a dilemma as to which drug he should choose first, and to which he should change if that treatment fails. This can encourage the manufacture of several pharmacologically related drugs in order to satisfy the demand for a better one.

Our interest in the size and nature of practitioners' drug repertoire has led us to consider the changes which doctors make in the drugs of choice. One reason for the frequent changes which occur may be dissatisfaction with many of the present drugs available and possibly a reluctance to withhold drugs in some illnesses which are self limiting.

## **Aim**

The purpose of this study was to examine some common diseases and estimate the doctors' degree of satisfaction with their current drug treatment.

## **Method**

A simple survey was carried out with the help of two randomly-selected groups of general practitioners, one from the north of England and the other from the south. These two contrasting areas were selected in order to avoid the danger of reporting effects which were local only.

### Questionnaire

A list of 19 diagnoses was chosen from those conditions which appeared most often in the 1974 National Morbidity Survey. The first 100 general practitioners were selected from an alphabetical list of doctors in each of two English counties, Yorkshire and Sussex.

The doctors were asked to complete a questionnaire giving their ratings of the efficacy of current drug treatment in each of these 19 reasonably well-defined clinical conditions. Ratings were requested along a continuum of good—reasonable—poor—useless. They were asked to bear in mind in their judgment not only pharmacological efficiency, side-effects, and contra-indications, but also recognised non-drug treatments for these conditions. The participants were also invited to add their comments at the end.

### Results

Out of 140 (70 per cent) completed questionnaires by the general practitioners, 112 (56 per cent) were suitable for analysis, 52 from Yorkshire and 60 from Sussex.

The highest degree of satisfaction (mean rating 1.009) was seen in the drug treatment of simple iron deficiency anaemia, and the lowest in the drug treatment of obesity (mean rating 3.285). A high degree of satisfaction was also seen in the treatment of acute tonsillitis and in simple conjunctivitis, but a low degree in the treatment of haemorrhoids and migraine (table 1).

TABLE 1  
DOCTORS' ASSESSMENT OF DRUG EFFECTIVENESS IN RANK ORDER  
(112 doctors)

Clinical condition	Good-1	Rating (1-4)		Useless-4	Mean score	Standard deviation <sup>1</sup>
		Reason-able-2	Poor-3			
1. Simple iron deficiency anaemia	111	1	—	—	1.009	0.00 (1)
2. Acute tonsillitis	104	6	2	—	1.089	0.33 (2)
3. Simple conjunctivitis	94	17	—	1	1.178	0.45 (3)
4. Acute cystitis (before arrival of urine analysis)	78	30	4	—	1.340	0.55 (6)
5. Attack of gout	63	47	2	—	1.455	0.53 (4)
6. Anxiety state	44	61	7	—	1.545	0.61 (10)
7. Urticaria	54	51	6	1	1.590	0.55 (6)
8. Benign or uncomplicated hypertension	37	67	8	—	1.741	0.58 (9)
9. Acute sinusitis	46	47	18	1	1.768	0.73 (16)
10. Attack of hay fever	40	57	14	1	1.786	0.69 (13)
11. Naso pharyngitis	26	40	36	10	2.000	0.92 (18)
12. Depression	15	81	16	—	2.008	0.53 (4)
13. Acute gastroenteritis	40	39	20	13	2.054	1.00 (19)
14. Infantile eczema	21	56	35	—	2.125	0.69 (13)
15. Haemorrhoids	11	66	31	4	2.142	0.69 (13)
16. Croup in children	21	53	32	6	2.205	0.80 (17)
17. Chronic bronchitis	12	64	35	1	2.223	0.64 (12)
18. Migraine attacks	7	65	39	1	2.304	0.57 (8)
19. Obesity	—	10	60	42	3.285	0.62 (11)

Mean score = 1.834

Mean standard deviation = 0.60

<sup>1</sup> The figures in brackets give the rank order of standard deviations of doctors' ratings; hence they reflect the agreement of judgments. (1) denotes greatest agreement, (19) least.

The mean standard deviation was 0.60, ranging from zero in the drug treatment of simple iron deficiency anaemia to 1.0 in acute gastroenteritis. No doctor thought that

the drug treatment of obesity was 'good' and as many as 37.4 per cent thought it was 'useless'. No doctor thought that the treatment of simple iron deficiency anaemia was 'poor' or 'useless'; all except one thought that the treatment was 'good'.

The treatments of simple iron deficiency anaemia, acute tonsillitis, and simple conjunctivitis were the top three in rank order of drug treatment effectiveness, and they were also in the same rank order (table 1) in the degree to which the doctors agreed on their effectiveness, the standard deviations were: 0.00, 0.33, and 0.45 respectively. There was more consensus among doctors in the treatments which they thought were most satisfactory (mean score below 2.00: mean standard deviation 0.50) than among those who thought the treatment was not as effective (mean score over 2: mean standard deviation 0.72).

There were no significant differences between the Yorkshire group of doctors and those from Sussex in their rating of their personal satisfaction in the general effectiveness of drug treatment in the 19 named clinical conditions (Sussex 1.750, Yorkshire 1.815;  $p=0.05$ ). The results of the study were also reflected in the doctors' personal comments.

Some, for example, expressed a strong feeling that the treatment of obesity should not be by drugs and, as one doctor put it, "Obesity is the only one (of the group) which stands out like a sore thumb." Another stressed the importance of no drug treatment in other conditions, as in the majority of cases of gastroenteritis, for example. One doctor said: "The use of medicine in any doctor/patient situation has usually some effect." This comment suggests the placebo effect of drugs. A sentiment was expressed by some doctors of the importance of educating the public about the management of self-limiting diseases which need no drug treatment, such as upper respiratory infections of viral origin.

### Discussion

This study has shown that there is a wide variation of opinion among general practitioners about the effectiveness of drug treatment in several common conditions. Drugs are not the panacea for all ills, yet the doctor depends on them for the treatment of many diseases. They are easily available, and it has become common for a consultation to end with a prescription (Stimson and Webb, 1975). The patient is usually satisfied at this point, and the doctor has been able to bring the consultation to a close.

However, in this study there were some conditions on which there was a high degree of agreement that the drug treatments for them were good. Simple iron deficiency anaemia was the highest, not only in ranking order of efficacy of treatment by drugs (1.009), but also in consensus (S.D. zero). The next two in rank order of efficacy and consensus were acute tonsillitis and simple conjunctivitis; both infectious. One could argue that some cases of simple conjunctivitis are self-limiting and that most cases of tonsillitis would get better without treatment. It might be unreasonable, however, to expect a doctor to take the risk with these two conditions that they would get better without complications.

On the other hand, in the treatment of obesity there is usually no risk in withholding drug treatment, but the alternative treatment involves time-consuming advice about diet. Although obesity ranked lowest in rank order of effectiveness, it was not matched by the same degree of consensus (standard deviation 0.62; mean 0.60; range 0.00-1.00). The drugs used in obesity are usually effective in curbing the appetite, an effect which lasts only while the drug is being taken.

It is surprising that there was such poor consensus among the doctors on the drug treatment of acute gastroenteritis (standard deviation 1.00); it was the lowest in rank order of standard deviations. Here again, as in the treatment of obesity, advice to the patient, or the parents in the case of children, is important, but again more time-consuming than writing a prescription. Advice on the method of combating dehydration,

while the body itself usually takes care of the infection, must be correctly given and the advice properly understood. If a drug is given at the same time, then it may be given undue credit, because the patient in most cases would have recovered quickly without it.

Many drugs, whether they are effective pharmacologically or not, will have a placebo effect in some patients. A tablet made of a completely inactive substance can have a strong placebo effect, which in some cases can even show physiological changes (Beecher, 1955). It is difficult for the doctor to know what proportion of the improvement in his patient is due to the placebo effect of the drug and how much is due to its pharmacological action.

The next lowest in rank order of effectiveness in this study was migraine (2.30 with a standard deviation of 0.57). In an interesting double-blind controlled clinical trial of cross-over design carried out by Waters (1970), the placebo was found more effective than ergotamine tartrate in the treatment of migraine, ergotamine being a standard treatment for this condition; 40 benefited from ergotamine and 46 from the placebo.

In another study, Cotes and his colleagues (1969) selected out of a representative sample of 3,000 women the one per cent who had the lowest levels of circulatory haemoglobin, all of whom were found to be below 9.5 grams/100ml. Tests of cardio-respiratory efficacy were carried out on these women. They were admitted to a controlled trial in which they received, at random, either iron or a placebo. Although there was a rise of 4 gram/100ml in those receiving iron, there was no improvement in function as compared with those who received a placebo. Many people feel quite healthy with a lower haemoglobin level than 'normal'. However, if patients with obvious symptoms of anaemia are treated with iron, they may feel better at the end of the treatment.

When judging the effectiveness of a drug, not only is it important to take into account its pharmacological action, but also the therapeutic effect of the prescriber. Drugs are given primarily because of their pharmacological benefit, but occasionally they are used as placebos. In a busy surgery it may be tempting to bring a consultation to a close, before it has been properly completed, by writing a prescription and sometimes choosing quickly from a range of drugs from the relevant therapeutic group.

Prescriptions are easily written but they are poor substitutes for careful advice when this is the recognised treatment of choice.

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