PRACTICE OBSERVED

Practice Research

Psychotropic drugs and accidents in a general practice

G A C BINNIE

Abstract

The incidence of accidents over five years in a group of patients who had taken benzodiazepines, phenothiazines, and antidepressants for more than a year was compared with that in control patients who had not been taking tranquillizers. The patients taking benzodiazepines had a statistically significantly increased risk of having an accident compared with controls, though this was not true when they were not taking the drugs.

Introduction

Benzodiazepines have been implicated in causing road traffic accidents,¹ and it was thought that the association between intake of psychotropic drugs and accidents reported in a general practice population over five years might indicate the place of such drugs in the aetiology of all types of accidents. It has been suggested that accidents might be associated with the illness for which psychotropic drugs are prescribed,² and it was thought that the incidence of accidents in patients who had taken psychotropic drugs for more than 12 months in the five years could be compared with the incidence of accidents when these patients were not taking psychotropics.

Subjects, methods, and results

The records of all patients aged over 15 years who were patients of the practice for the whole of the five years 1977-81 were inspected. Takers were those patients who had been prescribed benzodiazepines,

phenothiazines, or antidepressants at any time in the five years, and for any indication, not necessarily psychiatric. For each taker a control was found whose record was next alphabetically in the practice records; the control was of the same sex, within three years of the same age, in the same or next social class, and had not been prescribed any psychotropic drugs in the study period.

Any accident to takers or controls that had been brought to the general practitioner's attention during the study period was recorded (Royal College of General Practitioners' classification 470-487),³ together with the psychotropic medication being taken at the time of the accident by the case in the case-control pair. Virtually all non-trivial accidents were recorded, as reported elsewhere.⁴

Controls could not be found for 16 takers, which is not uncommon in surveys of small populations, and a total of 205 pairs were entered in the study. Eighty-four pairs had had no accidents, 79 pairs had had at least one accident but not at a time when the taker was taking psychotropic drugs, and 42 pairs were identified where one person had had at least one accident when the taker was taking such drugs. The 42 matched pairs in which an accident had taken place when the taker was receiving psychotropic drugs were compared by McNemar's test, but the difference was not significant, and there was a similar finding when Wilcoxon's test was used.

The annual incidence of accidents was calculated for patients when taking each of the three groups of psychotropic drugs and, for those drug takers who took drugs for more than one of the five years of the study, for the period during which they were not taking drugs. The rate of accidents was compared with that of the control group (table). This showed a statistically significant increased risk for the patients receiving benzodiazepines compared with the controls; no increased risk was shown for the long term takers while not taking drugs, or for takers of phenothiazines and antidepressants.

Discussion

Betts *et al* found that chloridazepoxide and trifluoperazine appreciably altered driving behaviour in low speed performance tests.⁵ Skeggs *et al* suggested that takers of benzodiazepines had 4.9 times as many accidents as non-takers but could not confirm any increased risk to takers of major tranquillizers.¹ The number of road traffic accidents in this study was negligible

She was worried that he might be taking drugs. She had found a couple of white tablets in his bedroom, and he was apt to disappear for several days in a row, allegedly to London, and his behaviour was always worse for a day or two after he returned. He would never say exactly where he had been, who he had been with, or what he had been doing.

"Ever taken drugs, Adrian?"

"Cotta cigarette? ... Cheers. Doctors shouldn't smoke."

"The sensible ones don't. Nor should you. Have you ever taken drugs?"

"Yeah. Tried them all: speed, acid, downers—ever tried riding a scooter on an acid? No? It's fantastic, man. Sometimes the handlebars go soft, like spaghetti; just flop about in your hands."

"Sounds dangerous."

"Not if you control it. You can control it if you're strong enough. All you have to do is imagine they are, say, a broomstick, and they go stiff again."

"Still take them?"

"Gave them up. Too expensive. Never take anything now."

"At least he was taking; and he wasn't calling me 'man' all the time. Keep still; say nothing."

"Sometimes it stops."

"What stops?"

"The traffic, when I go by. But they won't find me."

"Who won't?"

"The Jam say it, all man. You should listen to The Jam."

The consultation was evidently at an end. I found mother and father in the kitchen, looking at me eagerly for some solution that I could not provide. I told them that I would make an appointment for psychiatric outpatients as he seemed disturbed, but could say little more as he ambled into the kitchen to make himself some coffee. They were clearly disappointed as I wished them goodnight.

Driving home I pondered. I was really rather, if not totally out of my depth. The chances of him attending outpatients were minimal. I was reluctant to bring out a psychiatrist on a domiciliary visit as it might shatter the tenuous relationship that had formed, and might be needed in the future. He had not actually done anything any harm, anyway. Either the problem would develop or fade away.

What had I learnt? In view of the family circumstances, being the product of a previous liaison between a doctor and a family, some acting out as he sought his identity was quite reasonable. Bad tempered adolescents are very common even in this orderly part of the world; were his parents expecting too much? Certainly he had been taking drugs, though he said he had stopped, but he could be lying. Then there was that curious glimpse of paranoia at the end, like a shutter opening and closing; could he be developing schizophrenia? I was tired.

The key to the situation never crossed my mind.

Unfortunately, the problem did not fade away. I became quite unpopular with my partners as there were several calls to the house because of Adrian's difficult behaviour, which always seemed to occur when I was off duty, and one Saturday morning one of my partners came within an ace of admitting him under the Mental Health Act, only he couldn't find the forms and it all blew over.

I went to see him, gave him a few 25 mg tablets of Largactil that I felt fairly sure he would abuse or not take at all, and still hoped the problem would blow over. Indeed, he still hadn't done much amiss, but his parents were telephoning every day or two demanding that something should be done, though precisely what was not clear as he did not want help, and he had not actually done anything that could be construed as a danger to himself or anyone else.

Finally, the crisis broke, when I was on duty. It was a mild autumn evening when I reached the house. For the first time Adrian was frightened. He poured out details of the complex conspiracy that surrounded him. It was almost incomprehensible, but clearly of cosmic dimensions; he was about to be engulfed in the overwhelming powers of evil that swirled about him. He

accepted my offer of sanctuary in the local psychiatric ward, and I set off ahead while his mother brought him along behind in the family bonshaker.

We made it intact, with Adrian cowering in the back seat. The ward was busy and there was some delay; meanwhile Adrian was feeling a bit braver and wanted to go home, and if no one would take him he would find his own way. We were told that he couldn't actually be admitted there—the property was another hospital 10 miles away. I signed my half of the form, we popped Adrian into the back of the bonshaker, and his mother drove off at a furious pace through the night, handling the great car, which only gripped where it touched, with remarkable skill.

We drew up with a jolt in the forecourt of the magnificent, grout stone building, only to be faced with the most surreal event of an evening that was rapidly sliding out of control; the staff were on strike!

In the chilly porter's lodge I pleaded with stony faced folk of uncertain status to take Adrian as an emergency despite the fact that he was properly sectioned. It was like trying to get contraband into a Ruritanian castle.

In due course they relented and couldn't have been more helpful, and Adrian was admitted.

He was sent home in a few days. Some weeks later he appeared in surgery with his mother. They had been to America, and Adrian had met his real father and really liked him. They were going to Australia to start a new life. "Funny behaviour?" Oh that was an amphetamine psychosis, said Adrian.

Lessons learnt

What did I learn? Amphetamines send you loopy. Drug takers tell lies. Drug taking may be symptomatic of a deeper problem. Listen for the factor no one mentions, in this case, his father. Hang on to your hat.

I don't know; I shall probably never meet this problem again.

Diary of Urban Marks: 1880-1849

At this time the regulation fee for a confinement was one guinea which included everything. In my first year I did 33 confinements, in the second 55, and in the third 88, after which I lost count. But in the years after the war and until the introduction of the maternity hospitals, Dr Thomas and myself used to do an average of 175 yearly, so that we have had an extensive experience in maternity work. It is a curious thing, too, in connection with the above figures that in my first year I took 2303, in the second over 2900, and in the third 2800. I had no sooner started in practice than the income tax surveyor sent me a demand for £12-10-0. I was dumfounded for a few moments but on recovery I went round to Nelson Jones and asked him for his advice. Then I went to see the surveyor and pointed out that I had only just taken over Trinity Place and that I had not a bean in the world. He merely said that as the assessment was the same as for John Davis I should have to pay and claim back if I did not make the amount. I asked him to be merciful and he seemed to be a kind man. After some discussion he consented to wait for a year on condition that I went to him at the end of the year and showed him what I had earned. On the first of February 1899 I was waiting for him on the doorstep of his office with my account book and a list of my expenses for deduction. These had been made out for me by my very good friend, Nelson Jones. He had insisted that I should claim for two suits which had been ruined by drugs and blood and for pens and pencils and every small thing which had been used in the course of my work even if it only cost a penny. The surveyor smiled at the list of expenses but nevertheless allowed most of them. After that I had no trouble with the income tax authorities until after the great war but that is another story which I will narrate in due course.

Accidents in drug takers; in long term drug takers when not taking drugs; and in controls

Drug	Total No of years at risk	Accidents	Rate of accidents	Accidents expected	χ^2
Benzodiazepines	106	18	0.17	10.8	6.3
Phenothiazines	46	4	0.09	4.5	NS
Antidepressants	46	4	0.07	4.5	NS
Drugs for more than 1 year when off drugs	49	13	0.27	9.3	NS
Controls	1024	47	0.046		
Total	1340	136	0.101		

and unlikely to have any noticeable effect on the conclusion that everyday activities of patients in general practice seem to be made more hazardous by taking benzodiazepines. This effect was not shown in takers of major tranquillizers or antidepressants.

There is no support for the suggestion that patients taking long term minor tranquillizers are less liable to have accidents than when their anxieties are untreated. Phenothiazines and antidepressants seem not to contribute to causing accidents, but this may be because of the small number of takers in this study; in any case, increased use in place of benzodiazepines would be counterbalanced by increased toxicity in overdose. When prescribing benzodiazepines the risk of contributing to everyday accidents must be considered.

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A Difficult Case

Contributions to this series are welcome for consideration

Adrian

COLIN SMITH

"How can I help you, man?"

"I don't know. Your parents called me because you'd been behaving badly and been making a lot of noise."

"Well, you can see I'm all right, and I just don't need you, man."

It was all a bit unreal—he was draped along the sofa in the well appointed lounge of a well appointed detached four bedroomed house on one of our smarter little country housing estates, and I was sitting on the floor with my elbow on an armchair. We sat in silence for a long time, he was gazing through the cigarette smoke at the ceiling apparently lost in the rock music on the record player, and I was just gazing into space.

His harassed mother had mentioned his behaviour to me on several occasions in the past few weeks, and once had brought him to surgery when he had countered my every inquiry with a clever remark and a superior smile, which had got us nowhere. This time she had telephoned because he had been shouting at his

parents, his little sister, and the neighbours, and had finally kicked in the glass panel by the front door.

It was midnight.

"Did you say anything about marmalade?"

"I beg your pardon?"

"You listen to The Jam? ... They say it all, man."

"Another long silence. I had no idea what to do, but it was my night on and I could be reached, so I decided to hang on and hope that something useful would emerge. The rest of the family had completely disappeared. I suppose we were forming some sort of relationship, though his cool, superior attitude and mid-Atlantic accent was a bit hard to swallow."

He must have been about 18 or 19, the product (as they say) of a previous liaison. I had known the family for a decade or so, but hardly knew him as he was never ill. His mother I knew well—a tough, attractive little person with cropped hair; highly intelligent and given to rather fascinating episodes of depression with deep philosophical and cultural overtones. She had been born and well educated abroad, and I had the impression that she yearned for rather more than life in a sleepy English village could provide. I admired her courage and forthright speech; she seemed to be asking no favours even when depressed. I think that she considered me a nice enough chap but not awfully bright, particularly at dealing with difficult adolescent patients.

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First Five Years in Practice: the 1960s

Hard times

SIMON JENKINS

The career intentions of final year medical students have now been extensively studied,¹ but when I was a final year student in 1959 there was no such guidance available to judge whether I differed from the norm in being undecided about my objectives after qualification. I could see no further than the final exam, was guided more by what I did not want to do than by any positive plan. I did not want to spend any more time in Birmingham, the city of my youth, nor did I wish to stay in the boresome atmosphere of the teaching hospital, where I had been for what already seemed an eternity.

When I completed my pre-registration year at the North Staffordshire Royal Infirmary I was at a loose end still, with no objective in mind. I thought about emigrating but deferred that idea for a year or so as our daughter was only a few months old and we preferred the security of a familiar country to the potential hazards of a less well developed health service in warmer climates. I happened upon a locum senior house officer post while I hunted around for a substantive one. To my amazement I secured a job in medicine and rheumatology at Manchester Royal Infirmary—a teaching hospital unconnected with my graduating medical school. By now I had decided that a hospital career was in prospect, and the first hurdle was the membership examination of the Royal College of Physicians.

During this residency two factors changed my mind. I had a family that I rarely saw and I was getting more and more into debt. I was reassured by my chief that I would be guaranteed a consultancy by the time I was 32, but that sacrifices would have to be made. The sacrifices would mean even less time with my wife and child and financial hardship. My overdraft then stood at £50, so after six months in a job that I had been surprised to obtain, it was with a sense of failure mixed with relief that I looked for a way out into general practice.

Buyer's market

In 1963 it was a buyer's market, somewhat akin to the present day. I looked in the *BMJ* and registered with the BMA Personal Services Bureau. I added my name to the hospital noticeboard and let it be known on the grapevine that I was available. I think I had four replies to my inquiries. One interview was conducted on the telephone. One I had on a Sunday as they were too busy to interview the applicants on any other day. The principal, who invited me to his house—I never saw the surgery—was glib at the time. I remember being offered a salary only slightly more than I was then earning. As the assistant I would have to live in the practice area and take equal duties with the other three partners, but there would be no guarantee of a

partnership and I would have to buy a house nearby. They were unable to tell me if I had got the job until they had seen a few more people. Although they said they would let me know, I am still waiting to hear from them.

I finally accepted an offer of an assistantship with a view to a partnership promised after approximately 12 months. No contract was given and parity was not even discussed. But the job had its attractions. There was a house rent free attached to the surgery, a regular and much larger pay cheque than I had been used to, and a sense of permanency that meant I was settled.

The experience of seeing patients who, though they preferred to see my employer, came to see me as "their doctor" was very new and I felt that this was really what medicine was all about. I seemed at last to have found my vocation. Patient gratitude was much more apparent in practice than it had been in hospital, and the patients seemed to be more understanding of my problems than I was of theirs. After all, they were experienced with previous assistants in the practice and I was fresh faced and green.

As the months passed I grew more and more interested in the incredible pathology that I unearthed. Patients were surprised when I took their blood rather than send them to the hospital outpatient department. In the first 12 months I had discovered five new cases of disseminated lupus erythematosus. During that time I established very supportive relationships with the local hospital consultants, mainly because we did our domiciliary visits together, which regrettably is a thing of the distant past.

"Be patient"

But gradually suppressed disquiet began to filter through. In the end even I became concerned about those patients who asked me when I was leaving. Although I refused to let my assistantship become one with a view to partnership, it drew but a whimsical response. After I had been there for more than a year the number of occasions on which I was questioned about my intended date of departure increased. I was asked to leave the practice, I took my courage in my hands and broached the subject yet again with my employer. I was asked to be patient, given a pay rise, and promised a partnership soon. Grateful as I was for the extra cash, my patience was wearing thin. I was asked to look around for an alternative and firmer offer of principal status. I was saddened by the decision as I had grown used to the people in the town and to the comfort of "being known." My feeling in the early summer of 1963 was of having waited a lot of time, but in retrospect I had acquired some useful experience. I had spent about 15 months as an unpaid clinical assistant to the obstetric department which more than qualified me for admission to the obstetric list through section VI. I had familiarized myself with the local hospitals and health services, and, most important, I had acquired a new wisdom about the need for a written partnership agreement and a clearer definition of the duties and responsibilities that a partner should expect.

Again I used the grapevine to find out if there were any

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opportunities in or around the now familiar practice area. Our two young children had intensified our desire to settle permanently. I learned that a consultant obstetrician in the local hospital partner in a two man practice in the adjacent town was leaving. Using his introduction, I contacted the senior partner. The premises by present standards were small but really quite advanced for 20 years ago. After all, we had an office-reception area, a separate examination room, a receptionist cum secretary, and a clean and bright door.

My charming and energetic new principal, who lived on the premises, believed that a high standard of medicine should be rewarded with a good income. He had acquired his MD while building up the practice from 900 to 4500 patients. Although the initial offer was of a partnership in 12 months to be followed by parity in five years, we finally agreed on six months as an assistant and parity in only four years. Within a week of the interview the letter setting out these terms was in my hands. There was no deputation service in the town and I readily accepted that I would be on call three nights a week. I also recognised that when the "practice" was on weekend call it would be me who would be primarily responsible for the work during the time that I was an assistant. We were fortunate to have a weekend and sickness scheme in which 16 of the principals from other practices participated.

I started this new job at the end of September 1963 and by April 1964 I was at last on the list of a family practitioner committee with over 1000 patients to my name. In July 1964, after having lived in rented accommodation for five years, our seventh home was the first that we had owned.

One of the conditions of the partnership was that I would have to purchase a progressive share in the property as I moved towards parity. The financial commitment of setting up a new home together with buying into a partnership left me no alternative but to approach a bank. I remember being surprised at the fact that although I was a young doctor on the list of a family practitioner committee with excellent future prospects, this did not impress the bank manager, who had observed my overfard progressively increasing during the previous three years. I merely wished to extend my debt from £150 to £2500. I had great satisfaction in telling him that if he did not wish to finance me I would take my business elsewhere.

It was with surprise, bordering on panic, that I heard the second bank manager express some doubts as to the wisdom of extending my credit without collateral. Fortunately, the partnership account was held at this bank and my new senior partner was prepared to put up my half of the practice premises as collateral against a loan that I would be able to repay over the next five years.

As well as this gesture of confidence, I received much good advice from my new partner. He reassured me that I would make a good general practitioner by the time I was 35. I measured this against the earlier advice that I could achieve consultant status by the age of 32, and it was not until I reached the age of 35 that I realised there may well have been some truth in his words.

Early 1960s

The early 1960s were hard times in general practice when many doctors were oppressed by the volume and type of work that they had to do. Premises on the whole were inadequate and ancillary staff support was patchy. Appointment systems were the exception, and in many cases did not work when they were tried. It was the pre-1961 era—before the true emancipation of women and the Abortion Act had not yet become law. Reputing systems were yet to appear on the scene, and the use of repeat prescription cards was somewhat frowned upon.

I passionately believed that general practice could be changed for the better. After all, it seemed to me to be the most satisfying and relevant form of medical practice. I became an associate member of the College of General Practitioners and I was asked to attend the local medical committee meetings. I became

concerned in the social activities of the BMA, which then had an important educational function since there were no post-graduate medical centres, nor indeed section 61 payments. I also became a member of the General Practitioners' Association, a now little known organisation that, unhappy with the establishment, strove to provide its own evidence for improving general practice. I had to face the question of whether it was better to work for change from inside the establishment or whether more would be achieved by creating a rumpus outside. I chose the former and in this suffered the fate of many revolutionaries by becoming imperceptibly part of the establishment.

This was the era before the primary health care team and attachment of other health professionals. We rarely saw the district nurse unless she happened to be visiting a patient's house at the same time. The health visitor was an intruder, giving contrary advice and someone with whom we were unable to speak, except perhaps through the medical officer of health. The midwife, however, was different. We saw her regularly at home confinements, although she did not attend the surgery and held separate antenatal clinics in the somewhat primitive local authority buildings. Social workers as such were unknown, although mental welfare and child care officers commanded great respect. Cooperation, or lack of it, was never an issue.

Another impressive feature of my new partnership was the routine use of records. In some practices it was not unknown for medical record envelopes never to be taken out of the shoe boxes under the consulting room desk. A new doctor entering such a practice had to depend upon the patient's memory to prescribe medication and to determine the medical history. In 1964 I acquired a clinical assistantship in the local casualty department which encouraged my links with the hospital and helped overcome the artificial divide that existed between hospital and general practice.

The family doctor "charter" in 1965 provided the encouragement to many doctors who were struggling to achieve a rightful place for general practice within the National Health Service as a whole. From those early beginnings when practice premises were underdeveloped and often uninviting, when national insurance certification was an unquestionable burden, and when to enter a vocational training scheme was but a insecure for the inadequate, the face of general practice has changed out of all recognition. There is no question that it has changed for the better.

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Diary of Urban Marks: 1880-1899

In those days there were no clinics of any kind. Davies used to do operations such as hernia at the patient's home at a charge of sixpence for tonsils for removal. Dr Brynmor Evans had taken over Dr Brice's practice at Landore and the three of us would start out on Dr Brice's morning at 9.30 and assist one another at the various cases we had each of us picked up during the week. If for a tonsil case the doctor in charge of it could get two guineas, the anaesthetist got half a guinea for his trouble and the three of us would share the rest. The anaesthetist got one guinea. For the major operations the fee was a guinea. We took turn to give the anaesthetic and to assist, for which of course no fee was forthcoming. The anaesthetist worked until 1914, which year saw the breaking up of a good many things in general. However, our unofficial partnership was a very happy one while it lasted.

practitioner must consider. This was not a new concept at the time that this paper was published, but since then prescribing an antibiotic to a child with an upper respiratory illness has become, for me, a warning signal, an alarm bell, an indicator to look beyond the child to the other members of his family, and especially to his mother, and to seek the psychological and social factors there that may have precipitated that particular consultation.

John Howie's work on respiratory illness has done more than help us to understand these conditions. He has shown that it is possible in general practice to take a common problem, one that many would regard as unexciting and rather a chore, and by examining it in depth come to understand more clearly the ways in which our patients, and we ourselves, behave. He has shown how the management of respiratory illness can become more exciting for us if we choose to open our eyes and ears, so that the care we offer our patients can become more effective. There must be other such common conditions whose study could be as rewarding.

GLUE EAR

The second of my papers relates to a complication of upper respiratory tract illness—glue ear, and was published in the *Journal of the Royal Society of Medicine* in May 1978 by M J K M Brown, S R Richards, and A G Ambekar.¹ The paper was a report of a five year follow up of a controlled trial of grommets for glue ear.

I found this paper helpful for several reasons. Otitis media and some degree of conductive hearing loss is common in my practice, and deafness in children is disabling, leading to difficulties in speech development and learning. Also, I liked the design of this particular study which analysed the results of managing serous otitis media in matched pairs of ears by inserting a grommet in one ear and carrying out no operation in the other. In other words, each of the 55 children in the study was his own control—near use of a paired organ for study and control groups.

All the children under adenoidectomy and at random selection a Shepherd grommet was inserted into only one ear. Pure tone audiometry follow up was carried out at three monthly intervals during the first year, and then again five years later. This showed no statistical difference between hearing tests performed at six months, nine months, and one year. At five year review scars and tympanosclerosis were present only in the ears into which grommets had been inserted.

FIG 2—Follow up of hearing levels in grommet and control ears from Brown et al.¹

The benefits to hearing from grommets occurred only during the first six months after operation; thereafter grommets offered no advantage over the control ears (fig 2). At five years there was no statistical difference in hearing levels between the ears but there was an increased incidence (42%) of tympanosclerosis in the ears that had received grommets and no evidence of such changes in the unoperated ear.

This paper showed me that conservative management is best for most children who have a conductive hearing loss caused by fluid in the middle ear. These children, however, require careful follow up and I see them at intervals of two to four weeks for audiotesting until their hearing returns to normal. Now I am reluctant to refer any child for the insertion of grommets unless I am convinced that there is no prospect that conservative management will be successful and I regard a fair trial of such management as a period of six months.

The correspondence that followed this paper was interesting and one ear, nose, and throat specialist remarked that the "classic British waiting list" in itself a type of conservative management,"² so perhaps even institutions such as these have their uses.

Two more recent contributions

The previous two papers stand out as work that has influenced my practice over the past five years. Two more recent papers I regard as contributions that are likely to change my practice in the future. Both were published in June 1983—the first in the *Journal of the Royal College of General Practitioners*, came from Belfast.³ S R Potts and W G Irwin reported the results of a survey by questionnaire of 240 general practitioners who were asked about their management of urinary tract infection in children. They found evidence in an appreciable minority of cases of delayed referral to hospital based on outmoded practice.

In considering the criteria for referral they stated unequivocally that all children with confirmed urinary tract infection should be referred to hospital for further investigation. The results of their survey showed that most general practitioners still believe that referral is only necessary for boys with their first infection and girls with their second. They stated that this policy must be abandoned since half, or more, of children with a single proved infection will have a structural or functional abnormality in the urinary system that can be detected by an abnormal voiding cystogram and a micturating cystogram. About a third of such children will have vesicoureteric reflux. They advocate this policy since most pyelonephritic scarring occurs before the age of 5 years, so that antibiotic prophylaxis after this time may have little effect on prognosis.

Just as the paper on grommets from Brown and his colleagues has made me less likely to refer children with glue ear for specialist advice, so this paper from Potts and Irwin will lead me to refer more, and probably all, children that I see with urinary tract infection for hospital investigation. As a result of reading their paper I suspect, too, that I shall be more energetic in seeking possible urinary tract infections in younger children who present with vague histories of tummy pain or being off colour.

The authors hope that the more careful investigation of children with this condition "will be to reduce substantially the 10% of renal transplant patients who have a urinary tract infection with a single urinary tract infection in childhood." If more systematic investigation and follow up of these children can prevent one such transplant operation then the effort will have been worth while.

The fourth paper I wish to consider was published in the *BMJ* on 25 June 1983.⁴ J P Thomas and W H Thomson compared thiazide diuretics and amiloride in the treatment of moderate hypertension. I read their paper at the end of a week during which I had seen three patients with symptoms of thiazide induced gout. I was therefore ready material for persuasion to alternative management. This paper has made me consider

Papers That Have Changed My Practice

No "road to Damascus" effect

W MCN STYLES

A review of the past 10 years fails to identify any particular scientific paper that has had a major and dramatic "road to Damascus" impact on the way in which I work. Yet many have helped my understanding of the common problems that I encounter daily, and two from the past stand out that have influenced my behaviour. A further two more recent contributions still have me wondering about changes in policies for the future and these, too, I consider briefly.

Two from the past

Illness in the upper respiratory tract is common in general practice—managing it can be humdrum, unexciting routine. I look back to two papers that in different ways have helped me to understand these conditions and that have altered the way I react when I encounter them in my consulting room.

UPPER RESPIRATORY TRACT ILLNESSES

Not surprisingly, my first paper relating to upper respiratory tract illness in general practice is one from John Howie, now professor of general practice in Edinburgh, for he has made the greatest contributions to our understanding of the ways in which doctors use diagnostic terms and manage respiratory illness.¹ He showed clearly the influences that affect a doctor when he prescribes an antibiotic for a sore throat, and in 1976 he showed that variations in social and psychological history appreciably alter the response to antibiotics. This paper came to me as something of a relief, for I felt guilty about the haphazard way in which I prescribed antibiotics for this symptom. I readily accepted Howie's work as clear evidence that I was no more irrational than my peers, and so I continued to write up my work with a clear conscience and right, in the form of a paper in the *BMJ*, on my side.

But John Howie had more to tell and on 22 March 1980 he published with A B Bigg another paper in the *BMJ* entitled "Family trends in psychotropic and antibiotic prescribing in general practice",² and this I could not use to rationalise my practice in such a cavalier way. This was a further study of the factors that influence prescribing for acute respiratory illness other than those of the illness itself. The use of antibiotics for such episodes in children was examined in a 10 year retrospective study of the consultations of 50 families in a practice in Aberdeen. This proved the hypothesis that children who received an excess of antibiotics for episodes of acute respiratory illness

belonged to mothers who received an excess of psychotropic drugs. Furthermore, the high antibiotic use of these children was not linked in time to the high psychotropic drug use in their mothers. Indeed, the opposite seemed to be true—the time of highest antibiotic use of the children coincided with the time of lowest psychotropic drug use in their mothers (fig 1).

FIG 1—Relation in time between prescribing psychotropic drugs to high risk mothers and prescribing antibiotics to their children for acute respiratory illness from Howie and Bigg.²

Howie and Bigg postulated that on many occasions the presentation of these children with upper respiratory tract illness was a manifestation of their mothers' anxiety and that these mothers should have been treated as patients at the time of these consultations, rather than their children. Prescribing antibiotics for the children missed the basic reasons for these consultations, so that no help could be offered to their mothers. Indeed, the prescription of an antibiotic compounded in each mother's mind her anxieties about her child, confirmed her difficulties, and made it more likely that she would continue to behave in this way in the future. Howie and Bigg believed that the influence of the mother has to be seen as an important and inseparable part of such consultations. To disregard her missed the reason for the consultation: it would have been more appropriate to try to discover this than merely to treat the complaint that had been offered.

This paper showed once again how psychological and social factors may affect prescribing for physical illness in general practice. For it me underlined the importance of recognising that though these factors may be present in the patient, they may also be in other members of his family—a factor that the general

whether or not to continue using bendrofluazide as the diuretic of choice for moderate hypertension.

Thomas and Thomson reported two parallel studies. In the first 40 patients with newly diagnosed hypertension were treated with metoprolol and diuretic, either hydrochlorothiazide or amiloride. In the second study 38 patients who were already receiving treatment with hypotensives and thiazides either continued the treatment or the thiazide was replaced with amiloride. Initial biochemical assessments were compared with those after two years in the study.

In previously untreated patients the thiazide produced a fall in plasma potassium concentration and caused hyperuricaemia; neither of these effects occurred with amiloride. Patients on long term treatment with a thiazide had persistently low potassium concentrations and persistently high urate concentrations. Substitution with amiloride corrected the hypokalaemia and the serum uric acid concentration returned to normal. The impaired glucose tolerance of patients receiving long term treatment with thiazides was corrected in those who received amiloride. Throughout these studies control of hypertension was as effective with either the thiazide or amiloride.

Compliance with treatment may be difficult with hypertensive patients since they are asymptomatic, and yet sometimes the treatment makes them feel unwell. Compliance is especially difficult if hypertensive treatment has induced the painful symptoms of gout. I am attracted by any treatment that will prevent this and which has the added bonus of avoiding glucose intolerance and hypokalaemia and the risks of ventricular tachycardia and fibrillation after acute myocardial infarction that may be related to low potassium concentrations.

My intentions for the immediate future are to use amiloride instead of bendrofluazide for all new patients with hypertension who need a diuretic, and I shall consider later whether or not to substitute amiloride for bendrofluazide in patients who are already on long term treatment.

Conclusion

Although no one scientific paper has brought about major changes in the way in which I work, many have influenced me in small ways. Why have I selected the four papers presented here? John Howie's because it is one of his series that has helped me to understand more clearly the importance of consultations with patients with upper respiratory tract illness and because he has helped me to manage these problems less superficially. I admired very much the design of Brown's study of grommets and ears and the use of each child as his own control. This paper provided me with the management plan that could help children with this disabling condition and which would do least harm. Irwin and Potts shocked me into recognising that urinary tract infection in children is not a minor disorder but one that requires intensive investigation if serious and chronic disease is to be prevented in the future.

Thomas and Thomson's paper came at a time when I was perhaps ripe for change—disenchanted with the iatrogenic disease that I seemed to be causing from my use of thiazide diuretics. I hope that a change to amiloride will make a difference. But who knows whether or not this will occur.

For me, the characteristics of any valuable paper is that it

makes me re-examine things that previously I have taken too much for granted; it makes me question the ways in which I work. Such papers are not uncommon and undoubtedly bring subtle changes to my practice. The four papers presented here have influenced me the most in the past five years.

References

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ONE HUNDRED YEARS AGO. Still—see in the *JOURNAL* of March 24th, an article referring to a very severe endemic malaria fever, experienced in Amritsar, Punjab, in 1881. As I am in a position to be able to state facts on this subject, perhaps I may be allowed to give my experience. I had the misery of being senior medical officer to the British forces in that station from March to December, 1878. For the five latter months that place was plague-stricken with a virulent type of malarial fever, markedly intermittent, but with dangerous complications. I suffered from it during those months more or less, having before contracted it in Ferozepore, fifty miles distant. This is shown by Parkes to be the hottest station in India, one exception. He calculated that into the sand of that district the sun's rays penetrated four feet, and yet in 1876-1877 there was a perfect plague of "marsh fever." This was unknown until the fatal "canal project" was instituted. It was there when the first canal burst and flooded miles of the red-hot plain. Then the heat of the sun, combined with the steam of flood water on over-heated sand produced the curse. The same cause existed in Amritsar. Your informant states that the cause was excessive rain-fall. In 1878 that was not the case. The fall was scanty, but the district was a reeking sponge from "canal irrigation." Authorities do not like this fact to be brought to light, but I am happy to state that the cause was not rain, but the sun. I brought this subject without shrinking to their notice (officially): weekly, quarterly and annually, and was in hot water accordingly, but no harm accrued to me ultimately. Even after years of residence in England, I can state from personal experience that the fever recurs. As in the period named by your informant, so in 1878, the whole population, white, malarial, and black, was prostrate, and I assert that as fever of this description was unknown in the Ferozepore and Amritsar until the "canal system" was introduced, and, at alone, it is alone in the Punjab, and in India. I could relate some extraordinary cases of dangerous collapse simulating that of cholera which occurred during the progress of this fever, but they would not be suitable to this letter.—Yours truly, HCP. (*British Medical Journal* 1883;3:1051).