

PRACTICE OBSERVED

Practice Research

Screening Rastafarian children for nutritional rickets

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Abstract We examined 42 Rastafarian children under 5 years of age who were registered with a single inner city general practice to determine the prevalence of nutritional rickets. Twenty children were receiving a strict vegan (I-tal) diet and were considered to be at high risk of developing rickets and were referred for biochemical and radiological investigation. Seven of 20 children investigated had rickets, giving an overall prevalence of 7/42. Treatment with oral cholecalciferol was successful in all seven children. Fourteen of 18 children had evidence of iron deficiency, with low haemoglobin concentrations and hypochromic-microcytic blood films. Before this study Rastafarian children rarely attended the well baby clinic, received no vitamin supplements, and few had been immunised. They now regularly attend the clinic, receive vitamin and iron supplements, and all have completed primary immunisation.

Introduction

Certain ethnic minority groups in the United Kingdom, particularly Asians, have an increased risk of developing nutritional rickets, and some cult diets are associated with vitamin deficiency states.^{1,2} A new high risk group was identified recently when four young black children with nutritional rickets, all of whom came from Rastafarian families, were described.³ These children, all under 2 years of age,

were fully breast fed beyond 6 months of age, did not regularly receive Children's Vitamin Drops, and were weaned on to a strict vegan diet known as 'I-tal'. All four children came from the same inner city general practice that cares for most of the Rastafarian families who live in Bristol.

Methods

The notes of all children under 5 years of age who were registered with the practice was obtained from the age-sex register held in the family practitioner committee's computer. The list was scrutinised by one of us (JJ) and two Rastafarian mothers who children had previously been found to have rickets. Rastafarian families were usually identifiable from their characteristic names or were known to the mothers.

Results

Forty two Rastafarian children, aged 3 to 54 months, were identified from the age-sex register. None regularly received Children's Vitamin Drops, few had received any immunisations, and all were infrequent attendees at the

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General practitioner obstetrics in the Northern region in 1983

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Abstract

In late 1983 a four page questionnaire on general practitioner obstetrics was sent to a 50% random sample of general practitioners in the Northern region of England, 84% responded. Half of them said that they had access to general practitioner facilities for delivery, and half of these used them. A quarter of all respondents had provided intramural care previously but had given it up, most of them during the late 1970s. Younger general practitioners were more highly qualified in obstetrics than older ones but did not do more intramural work. Isolated general practitioner maternity units were much more likely to be used than those that were alongside consultant units or integrated with them. Ninety per cent of respondents provided antenatal care, 77% of these at special clinics and 88% with midwives in attendance. Teamwork, however, was not well developed. Increasing general practitioner participation in obstetric care seems feasible but depends heavily on more appropriate training and intramural facilities being provided for general practitioners in association with specialist units.

Introduction

General practitioners today deliver fewer babies (in total and as a proportion of all births) than they did a decade ago and even fewer than two decades ago. There are several reasons for this: the falling birth rate, the abandonment of home deliveries, the lack of compensatory provision of general practitioner beds in hospitals, the consequent lack of practice for general practitioners, which is followed by atrophy of their skills and confidence.

Pressures have come from several directions to reverse this trend. General practitioners are now exerting the advantages of continuity of care in pregnancy and labour and the suitability of general practitioner maternity units for patients at low risk.¹ In 1981 the Royal College of Obstetricians and Gynaecologists and the Royal College of General Practitioners jointly recommended that the number of general practitioners who provide full obstetric care should be increased.² This was restated by a working party of the Royal College of Obstetricians and Gynaecologists on antenatal and intramural care. Patients have begun to react more openly against the dehumanising of birth and the inappropriate use of obstetric technology.³ Some consultants now recognise the particular skills contributed by general practitioners in a low risk context.⁴ Finally, a recent government report drew together many of these views and included them in its recommendations.⁵

Unfortunately, this debate has been conducted without hard evidence on how many general practitioners still do intramural work, although educated guesses have been made.⁶ Efforts to reverse the decline in the number of general practitioner deliveries must be based on a realistic estimate of the extent of the contribution that general practitioners make to intramural care. Firmer statistics

are also needed to plan facilities for general practitioner deliveries and the organisation of general practitioner training.

In late 1983 we undertook a postal survey to investigate the obstetric work done by general practitioners in the Northern region.

Method

Since the number of general practitioners doing intramural work was thought to be small the survey sample had to be large for reliable statistics to be derived from it. The sampling frame consisted of the lists of principals in general practice in each of the nine family practitioner committee areas of the Northern region. Each list was stratified by practice size—that is, the number of principals. A four page questionnaire was sent to a 50% systematic sample of the resulting list of 1480 general practitioners in the region. After two weeks all non-respondents were sent a further copy of the questionnaire with a reminder letter. After a further two weeks the remaining non-respondents were sent a copy of the questionnaire on which 14 of the 50 questions had been highlighted and they were asked to complete either the whole questionnaire or, if pressed for time, only the highlighted questions. Although not all of the returned questionnaires had been completed, all included a reply to the key question of whether the respondent undertook intramural care.

Of the 740 questionnaires sent out, 620 were returned (84%). Roughly half of those who were approached responded to each of the three mailings. The proportion of general practitioners who undertook intramural care was similar in each phase of the response—about 25%. This suggests that the survey respondents are reasonably representative of the population of general practitioners in the Northern region. Response rates for the nine family practitioner committee areas varied from 75% to 89%.

Because our questionnaire consisted of 50 separate questions it would have been possible, in theory at least, to compare thousands of different pairs of questions in analysing it. Such an approach, however, is both wasteful and more likely to generate spurious statistical associations. Therefore, before analysing the completed questionnaires we drew up a list of fewer than 200 pairs of questions, the responses to which we wanted to compare. Where both questions had categorical responses we used the sample χ^2 test, since the few remaining comparisons on our list were between questions with quantitative responses on the other the only test we needed was the Mann-Whitney U test. More than 50 of the resulting tests were significant, a substantial proportion of them at the 0.05 or 0.1% level. The differences cited in this paper are limited to those that were significant at or below the 5% level in this way.

Results

The characteristics of the respondents were as follows: 82 (13%) were women, 538 (87%) men, 14% had graduated before 1950, 23% between 1950 and 1959, 26% between 1960 and 1969, and 37% after 1969; 91% were on the obstetric list, 33% held the diploma or membership of the Royal College of Obstetricians and Gynaecologists, and 4% had a hospital appointment in obstetrics or gynaecology. Younger general practitioners were more likely to hold the DRCOG or MRCOG than older ones.

Ten per cent of respondents belonged to small practices (up to 3000 patients), 25% to medium sized practices (3001-9000 patients), and 65% to large practices (over 9000 patients). No relation was found between the size of the respondents' practices and the likelihood of their providing intramural care.

ANTENATAL CARE

Ninety per cent of respondents provided antenatal care: 21% cared for up to 18 pregnancies each year, 45% for between 19 and 38 pregnancies, and 34% for more than 38 pregnancies. Of those who provided antenatal care, 77% held special antenatal clinics, and these were more commonly associated with larger practices and with general practitioners who cared for

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well baby clinic. Twenty children (eight boys, 12 girls) were reported by their mothers to be receiving I-tal diets. These children, plus three others included in the request of their parents, were referred for biochemical and radiological investigation. Seven out of 20 children referred (including the four previously reported) had clinical, biochemical, and radiological evidence of rickets. The overall prevalence was therefore 7/42 (17%). Clinical signs in all cases included wrist swelling, palpable rib 'beading', and frontal bossing of the skull. None of the children had biochemical evidence of rickets in the absence of clinical signs. The table gives details of biochemical investigations of the affected children. Diagnosed rickets was treated with oral cholecalciferol suspension, 3000 units daily for three months. Compliance with treatment was excellent, and all have fully recovered.

Table with 5 columns: Sex, Age (months), Serum calcium (mmol/l), Serum phosphate (mmol/l), Alkaline phosphatase (U/l), Haemoglobin (g/l). Rows include 14 children with rickets and 28 without.

Haemoglobin concentrations and blood films were obtained in 18 children. Fourteen out of the 18 (78%) had evidence of iron deficiency. The mean (SD) haemoglobin concentration was 10.3 (0.79 g/dl, range 8.5-11.4). The children with rickets had a lower mean haemoglobin concentration (9.7 g/dl) than those without rickets (10.7 g/dl) (p < 0.01, Student's t test). Fourteen children, including all of those with rickets, had hypochromic-microcytic blood films.

Discussion

Infantile rickets has been reported in the United Kingdom in children of Asian, West Indian, and Cypriot origin and has been reported in West Indian children who live in Jamaica.⁷ Rastafarians, being a minority group among West Indians, represent yet another group at risk of developing nutritional rickets. Rastafarianism is attracting many young West Indian followers, and their beliefs include advice to adhere to a strict 'I-tal' diet.⁸ After our original report of four Rastafarian children with nutritional rickets considerable interest was shown by the local press and radio and television stations.⁹ Sensitive coverage by the television station included an interview with a Rastafarian leader, who endorsed the use of oral vitamin D treatment. As news of the risk of infantile rickets became known to the Rastafarian community several mothers presented at the health centre requesting that their children be examined. It became apparent that a screening programme was needed and that the Rastafarian community was likely to cooperate. Previously, the Rastafarians seemed to shun orthodox medicine, particularly prescribed medication, and some of the fathers seemed anxious to avoid invasive investigations, including venepuncture. The screening programme was planned in conjunction with the local children's hospital. Most of the children were seen in the health centre, and only children who had clinical rickets or were considered to be at high risk of developing rickets were referred to hospital, where investigations were kept to the minimum necessary to make the diagnosis. As a result of the close cooperation between the health centre and the hospital the screening programme was successful in terms of both uptake of screening and compliance with treatment.

Of 42 children screened, seven had rickets, giving a prevalence of 17%. It was not clear why the affected children developed rickets while the others did not. All of the children came from similar social

environments in an inner city area where opportunities for outdoor recreation may be limited. Style of dress and social environment were no different for the rachitic and non-rachitic children. Rachitic children had appreciably lower haemoglobin concentrations than non-rachitic children, which may suggest that they had been given stricter vegan diets. Rastafarian mothers in Bristol usually breast feed their infants into the second half of the first year, when the babies are weaned on to a vegan diet containing no animal products and few fats or oils. Their diets are deficient in vitamin D and iron but contain sufficient calories, protein, and calcium.¹⁰ Routine administration of Children's Vitamin Drops should allow the children to adhere to their Rastafarian diet, while providing sufficient vitamin D to avoid nutritional rickets.

Throughout the screening programme the members of the primary health care team, particularly the health visitors, spent time with the Rastafarian families and impressed upon them the importance of vitamin and iron supplementation, immunisation, and attendance at the well baby clinic. Rastafarian children are now regular attendees at the clinic, receive vitamin and iron supplements, and have completed primary immunisation. Furthermore, Rastafarian women are now taking vitamin D supplements during pregnancy and regularly attend the antenatal clinic. As a result of screening for rickets doctors and health visitors have established a good relationship with the Rastafarians and have been able to improve many aspects of their health care.

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100 YEARS AGO

We lately referred to the possible danger of the spread of glanders by public cattle troughs. We have since learned that, in the year 1880, a corresponding case took place between the Metropolitan Board of Works and the Metropolitan Drinking Fountain and Cattle-Trough Association upon this subject; and, although the Association had always taken precautions to avoid any such serious communication of disease, and had good reason for believing that their precautions were effectual, they, nevertheless, feared, at the suggestion of the Board of Works, a tumbling bay to each trough, by which the water would run off direct into the gully, and increase the risk at which the constant flow of water passes through the troughs. The Association have always kept a large staff of servants constantly at work cleaning out the troughs, and they have never had a complaint of disease being contracted in the way suggested, although not fewer than 200,000 horses are drinking daily at them. In their printed memorandum upon this subject, the Association give full reasons for their contention that glanders is not transmitted by their troughs. We are very glad to give publicity to these facts, and to recommend the Metropolitan Drinking Fountain and Cattle-Trough Association to the consideration of those of our readers, who are able and inclined to give support to an institution which does much to alleviate and prevent animal suffering, and whose funds, we believe, are by no means flourishing. (*British Medical Journal* 1885; 1:342.)

large numbers of pregnancies. The latter were also more likely to have an attached midwife but not more likely to do intramural work. Of those general practitioners who provided antenatal care, 77% had their own obstetric room in their practice, and 24% more than a quarter of the women in labour to whom their general practitioners had given antenatal care, and only 7% attended more than half of such women in labour.

ASSOCIATION WITH MIDWIVES

For 88% of respondents who gave antenatal care a midwife was either attached to their practice or routinely attended their antenatal clinics. These midwives, however, were unlikely to attend the general practitioner's patients (about 8%), and more than a quarter of the women in labour to whom their general practitioners had given antenatal care, and only 7% attended more than half of such women in labour.

Twenty seven per cent of attached midwives provided antenatal care if the general practitioner was absent, and 36% normally undertook some routine antenatal care in place of the general practitioner. General practitioners who had attached midwives seemed more ready to share responsibility for antenatal care with midwives in either of these two ways. General practitioners from small practices were more likely than those from large ones to let the midwife deputise in their absence but not more likely to delegate routine antenatal care to her.

ACCESS TO AND USE OF FACILITIES FOR GENERAL PRACTITIONER DELIVERIES

Though most respondents interpreted the question 'Do you have access to general practitioner delivery facilities?' geographically, a few interpreted it as 'Have you made formal arrangements to use your local general practitioner delivery facility?' This with regard to a few hospitals some general practitioners said that there are general practitioner delivery facilities there while others said there are not.

About half (328 of all respondents) had access to facilities and about a quarter (159) used them. Of the 294 (47% general practitioners who had no access, 21% were willing to accept it if offered, 60% would refuse it, and the rest were undecided. Willingness to accept access did not vary appreciably with age group, but was related to levels of obstetric qualification: general practitioners who held the diploma or membership were more likely to accept and, not surprisingly, to geographical distance from the hospital where the facilities would be located.

Age group was not an important factor in whether available facilities were used or not, neither was sex, though this was complicated by the fact that many women general practitioners expressed enthusiasm for intramural work but were prevented from doing it by family commitments.

General practitioners with access to delivery facilities were asked how far away these facilities were from (a) their surgery and (b) their home. The average of these two distances was calculated for each respondent and shown that 25% were within six minutes' driving time from the facilities, 65% were from seven to 15 minutes away, and 15% were 17 or more minutes away.

Of the delivery facilities to which respondents had access, 28% were isolated, 20% were alongside consultant units, and 51% were integrated with consultant units. Levels of use varied widely in the different family practitioner committee areas. 79% of general practitioners with access in Cleveland used the facilities, 60% in County Durham, but less than 30% in Newcastle, Tyne-side (north and south), Gateshead, and County Durham.

TABLE II—Distance from unit and use made by general practitioners with access

Table with 4 columns: Distance from unit (miles), Use made by general practitioners (number of deliveries), Total, and % with 2 degrees of freedom.

TABLE III—Reasons for not using or not wanting access to obstetric unit

Table with 3 columns: Reason, General practitioners who did not use (n=172), General practitioners who did not want access (n=122).

TABLE IV—Facilities in which respondents were not providing intramural care

Table with 3 columns: Year, No. of general practitioners who provided intramural care, No. of general practitioners who did not provide intramural care.

REASONS FOR NOT WANTING OR NOT USING FACILITIES FOR GENERAL PRACTITIONER DELIVERIES

Respondents who did not use facilities available to them were asked to give two main reasons for not doing so. Those who did not have access to facilities for delivery but would not accept it if offered were also asked for two main reasons. Table III lists the most frequently cited reasons, grouped into broad categories.

Discussion

The Northern region of England is a fairly typical region of Britain, and includes urban, suburban, and rural areas. The central fact that emerged from our study is that only about half of all general practitioners perceive that they have access to general practitioner delivery facilities, and only half of these still use them.