For Debate . . .

New programme of antenatal care in general practice

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Abstract

The conclusions from recent analyses of the clinical worth of routine antenatal attendances have been used in the setting of a modern primary health care team. As a result the number of times a low risk nulliparous woman is seen by her general practitioner has been reduced from 15 to eight and a low risk multiparous woman from 15 to six. The number of consultations with a midwife has also been considerably reduced. The time saved is used in longer, more structured consultations and for more intensive care of high risk, usually socially deprived, women. Despite these reductions in consultations organised, well recorded care of this type renders antenatal attendances at a hospital virtually unnecessary for low risk women.

Introduction

Traditional, routine antenatal care—that is, monthly attendances to 32 weeks, fortnightly to 36 weeks, and weekly to term—was promulgated in the 1930s to cope with the problems of the socially and medically deprived women of that time. The system is no longer relevant to the female population of the 1980s and its continuation is a meaningless and unnecessary waste of resources. The endless string of normal findings painstakingly recorded on cooperation cards in hospitals and general practices must suggest that some consultations might have been a waste of time for the midwife, doctor, and especially the mother. Careful and detailed statistical analyses of many thousands of antenatal consultations looking for the predictors of pre-eclamptic toxæmia and intrauterine growth retardation have shown that for the purposes of clinical detection the number of consultations could be dramatically reduced without decreasing predictive accuracy.^{1,2} In the setting of our modern primary health care team and with due regard to the psychosocial problems of pregnant women these ascetic statistical analyses have been injected with a modicum of “general practitioner humanity” and a new programme of antenatal care prescribed.³ The programme includes some of the newer investigations currently thought to be of value.

Methods and results

NEW STYLE PROGRAMME FOR LOW RISK NULLIPAROUS WOMEN

In our practice, as in many others, the general practitioner usually learns of the pregnancy at a routine surgery appointment. The first formal antenatal consultation follows this (customarily a few days later), and the general practitioner and midwife start care by assessing the woman's general condition. Any previous serious illnesses are noted, her obstetric and family history is checked, and the risk factor for her pregnancy is determined. Customary blood tests, including rubella and random blood glucose, are

taken. Other tests include culture of urine, cervical smear, and high vaginal swab. She is given leaflets about her early days of pregnancy and discusses the length of her stay in hospital with her general practitioner. The most vital component of the first consultation is the delineation of the degree of risk in the pregnancy and the ordaining of a personal programme appropriate to each woman. The decision whether or not to refer for specialist help is taken, although such referral can be made at any time during the pregnancy if complications arise. If a booking at a general practice unit is decided on the woman will see only her general practitioner and midwife throughout pregnancy. Her notes will be scrutinised, however, at the time of booking to ensure that she conforms to the overall guidelines for a delivery at a general practice unit. If she does not her case will be discussed by a booking committee of general practitioner, midwife, and consultant and appropriate arrangements made.

In our practice many problems are discussed during a consultation before conception with a family planning nurse attached to the practice.⁴ Not all women attend for this, but the numbers are increasing. In order to cover all the appropriate points the nurse works to a protocol, and an appropriate record is included in the notes.

Among the newer clinical investigations at booking are the inclusion of blood tests for rubella antibodies, as concentrations taken previously can wane. In accordance with recent recommendations by the World Health Organisation the first of two random blood glucose concentrations is taken with a note of the time of the last meal.⁵ Routine iron and vitamins are no longer given to women with normal haemoglobin concentrations and mean corpuscular volumes unless they are of a low social class, known food faddists, or belong to vulnerable ethnic minorities.⁶ Cultures of urine show that roughly 3% of women have bacteriuria without symptoms, and they are treated to prevent acute episodes of cystitis possibly followed by ascending infection. A further 3% have bacteriuria with symptoms that are often misconstrued as being “just due to the pregnancy.” Treatment of these women not only prevents complications, but also enables a much more pleasurable pregnancy.

Cervical smear and high vaginal swab are taken simultaneously to detect cytological abnormalities or, more commonly, fungal or bacterial infection—other tolerated “symptoms” of pregnancy. Again appropriate treatment prevents deterioration as well as possible fetal infection during labour. All women are provided with leaflets that concentrate on maintenance of health during pregnancy without too much information on labour or infant care at this stage.

Table I shows the subsequent programme to 32 weeks for most low risk nulliparous women. The more responsible role of the midwife is an aspect so often sought by the Central Midwives' Board.^{7,9} Each attendance has specific reasons. Among the newer clinical routines is the ultrasound assessment at 16 weeks for confirmation of dates, establishment of the

TABLE I—New style antenatal programme for low risk nulliparous women from eight to 32 weeks

Duration of gestation (weeks)	Consultant	Major reasons
8	Midwife and general practitioner	See Methods and results
12	Midwife	Questions to midwife on progress
16		Scan at hospital
22	Midwife	Baseline weight; blood pressure; possibility of twins (if no scan); leaflets on later pregnancy and labour; arrangements for classes, films, and National Childbirth Trust
26	Midwife	As for 22 weeks
30	Midwife and general practitioner	Assess fetal size; blood pressure; weight (predictive of intrauterine growth retardation or pre-eclampsia); customary blood tests, including second random blood glucose concentration

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anatomical normality of the fetus, and detection of twins. At 22 weeks a second set of leaflets about later pregnancy and labour is provided by the midwife. Arrangements for relaxation classes, films, and sessions with the National Childbirth Trust are also made at this time. At 30 weeks both doctor and midwife carefully assess the fundal height and fetal size. Taken together with any increase in weight and the three recordings of blood pressure, suspicions of retarded intrauterine growth and pre-eclampsia will be aroused with regard to some women, who can be seen more often. The second random measurement of blood glucose concentration is taken at this time.

Table II shows the more intensive care appropriate to low risk nulliparous women from 34 to 42 weeks with the dual care of the midwife and doctor, who fortify and confirm each other's opinions and establish

TABLE II—New style antenatal programme for low risk nulliparous women from 34–42 weeks

Duration of gestation (weeks)	Consultant	Major reasons
34	Midwife and general practitioner	Fetal presentation; pelvic assessment; blood pressure; urine
36	Midwife, general practitioner, and family planning nurse	Blood pressure; urine; fetal presentation; build rapport; discuss "labour plan"; leaflets on infant care; discuss contraception
38	Midwife and general practitioner	As for 36 weeks (except leaflets and talk on contraception); engagement of presenting part
40	Midwife and general practitioner	As for 38 weeks
41	Midwife and general practitioner	As for 38 weeks; confirm normality
42	Midwife and general practitioner	As for 41 weeks; double check dates

TABLE III—New style antenatal programme for low risk multiparous women from eight to 32 weeks

Duration of gestation (weeks)	Consultant	Major reasons
8–12	Midwife and general practitioner	See Methods and results
16		Scan at hospital
22	Midwife	Baseline weight; blood pressure; possibility of twins; leaflets on late pregnancy and labour; arrangements for classes, films, and National Childbirth Trust
30	Midwife and general practitioner	Assessment of fetal size; blood pressure; weight (predictive of intrauterine growth retardation and pre-eclampsia); customary blood tests, including second random blood glucose concentration

rapport before labour. Pelvic assessment is carried out by the doctor at 34 weeks; the "tipping" of the sacral promontory, prominent ischial spines, or a suggestion of a narrow pubic arch or intertuberous diameter might indicate a need for a second opinion on pelvic size by a specialist, more especially if these signs are found in conjunction with a vertex above the pelvic brim in the last two to three weeks of pregnancy. This is usually the only internal examination that the woman has to tolerate during the entire pregnancy apart from an early speculum examination by the midwife for smear and swab.

The appointment at 36 weeks is extremely important and many matters are discussed: how labour starts, what are the indications for going into hospital if the woman wants most of her first stage at home; whom does she want as companion in labour (the father, her mother, or a friend); what are her feelings about drugs to relieve pain, epidural analgesia, episiotomy, methods of bonding, and instant breast feeding. The possibility of transfer from the general practice unit to specialist care during labour for fairly minor deviations from the norm is discussed. This is not an uncommon occurrence owing to the crudity of interpretation of the "tests" currently available. Discussion during pregnancy precludes undue anxiety if transfer is necessary. At 36 weeks the woman re-establishes contact with her family planning nurse to discuss contraception after the birth.¹⁰

NEW STYLE PROGRAMME FOR LOW RISK MULTIPAROUS WOMEN

Many of the reasons for the first antenatal consultation will have been discussed at the consultation before conception, which is part of the postnatal examination of a previous pregnancy.¹¹ The remainder can be quickly gone over and the appropriate tests done. After this first assessment, and the ultrasonography, only one consultation with a midwife is necessary until the appointment at 30 weeks (table III). From 30 weeks until

TABLE IV—New style antenatal programme for low risk multiparous women from 34–42 weeks

Duration of gestation (weeks)	Consultant	Major reasons
36	Midwife, general practitioner and family planning nurse	Blood pressure; urine; fetal presentation; build rapport; discuss "labour plan"; leaflets on infant care; discuss contraception
40	Midwife and general practitioner	As for 36 weeks (except leaflets and talk on contraception); engagement of presenting part
41	Midwife and general practitioner	As for 40 weeks; confirm normality
42	Midwife and general practitioner	As for 41 weeks; double check dates

term fairly few attendances take place (table IV), and the repeated blood pressure recording that is so much a feature of traditional antenatal care is no longer carried out. Because of the smaller number of consultations clinical accuracy is vital and the doctor and midwife work together. The appointment at 36 weeks is again of major importance, although less revelatory for a multiparous than a nulliparous woman. No internal examination except the midwife's tests in early pregnancy takes place.

Against the background of this more stringent care women are told at their first attendance that the antenatal clinic is open at a specific time each week, and if they have problems about which they are unhappy they can attend without appointment at the clinic and be seen by midwife or doctor, or both. In this way fairly acute problems or anxieties can be attended to when they arise. For urgent problems arising at other times women can attend during normal surgery hours or request home visits if they are unable to leave the house. Many obstetricians categorise risk groups primarily on clinical grounds—for example, previous caesarean section and grand multiparity—but in the setting of general practice "risks" often pertain to other variables. Patients regarded as high risk by a general practitioner and accordingly seen much more often are those unmarried, of low social class, aged 17 and under, considering adoption of the baby, financially deprived, single parents, grand multipara, physically handicapped or otherwise ill, with low weight (less than 51 kg), from ethnic minorities (some), unduly anxious, and fairly infertile. They are also referred to other professionals such as a health visitor or social worker, who also operate at the practice as part of the primary health care team.

At the end of the session midwife and doctor discuss the notes of all the attenders. Sharing of information and education results. In addition, the notes of those who have not attended are scrutinised because with limited attendances it is all the more important to note those patients who do not turn up. Telephone calls are made, letters are sent, or the midwife carries out home visits as appropriate to each woman. Low risk nulliparous patients see the doctor and midwife together about eight times compared with 15 in the traditional system, and low risk multiparous women see them six times instead of 15 (table V). The midwife sees nulliparous women an extra three times on her own and multiparous women once (see tables I and III).

TABLE V—Fall in number of routine general practice consultations

Period of gestation (weeks)	Nulliparous women		Multiparous women	
	Old style	New style	Old style	New style
8–32	7	2	7	2
34–42	8	6	8	4
Total antenatal period	15	8	15	6

Discussion

By following these new protocols fewer patients attend each session, the atmosphere is leisurely, the consultations are longer, and women are given the opportunity to talk at length, ask questions, and after the responses ask more questions. Most importantly there is a purpose for each consultation and the demeaning, much criticised "conveyor belt" style of care disappears.¹² The midwife is assigned a responsible role and is used to her full potential. She is a screen for abnormalities as well as continuing her important psychological support for each woman. Other members of the team working under the same roof are used to the full, and extra care is given where it is needed. The higher risk clinical groups have combined care with hospital specialists but need to be seen more often by a general practitioner and midwife as they often require supportive psychological care as well as explanations of hospital routines.

Currently the greatest complaint from our women concerns their having to attend hospital antenatal clinics for what appear to them to be unnecessary consultations. Most of these and their content merely duplicate care already provided by the general practitioner and his team in the community. It is doubtful whether any low risk women (roughly three quarters of all pregnancies) who are booked for delivery in a general practice or specialist unit need to be seen at hospital at all, except perhaps for a scan at 16 weeks and a consultation at 36 weeks if the specialist unit is to be responsible for the delivery. Patently this will be a comprehensive assessment to note that all has gone well during the pregnancy and is normal for that particular period of gestation. At the same time women can be introduced to the unit in which they are to be delivered and meet appropriate members of the staff. Certainly patients in this practice who are experiencing our new style limited care and compare it with the more traditional systems in earlier pregnancies are extremely grateful and enjoy the considerable saving in time and effort in already busy lives.

These limited protocols produce a much more individual and cost effective style of care. They are far more appropriate to antenatal care in the 1980s than the traditional and dated system still almost universally in use.

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Research from the South

Treatment of tetanus: an open study to compare the efficacy of procaine penicillin and metronidazole

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Abstract

A prospective, open, non-randomised clinical trial was carried out to compare the efficacy of procaine penicillin with metronidazole in the treatment of moderate tetanus among 173 patients. Patients in the metronidazole group had a significantly lower mortality rate, a shorter stay in hospital, and an improved response to treatment. These results establish the value of antimicrobial treatment in the management of tetanus and show that metronidazole is more efficacious than penicillin in this respect.

Introduction

Tetanus is an infective disease that usually results from the contamination of a wound by *Clostridium tetani*. It commonly presents with rigidity of the muscles of the neck and trunk and generalised reflex spasms. These are pharmacological effects that are due to the exotoxin, tetanospasmin, produced by the organism (Abdulrahim, paper presented at symposium on anaerobic infection, medical faculty of University of Jakarta, Indonesia, 1984).^{1,2} Although tetanus is entirely preventable by active immunisation, a high mortality rate of around 45% makes tetanus a serious problem

in developing countries where active immunisation is not universally practised.

The management of tetanus aims to provide supportive care until the neurotoxin fixed to nervous tissue has been eliminated and to prevent the absorption of further toxin by giving antitoxin and by eradicating the organism, the source of the toxin.

Although there is no clear evidence about the value of antimicrobial treatment directed against the causative organism in the treatment of tetanus, antibiotics are invariably given for this purpose; it is with the eradication of the organism by antimicrobial treatment that the present study is concerned.

During the past decade metronidazole has emerged as a highly effective agent for both treating and preventing a wide variety of anaerobic bacterial diseases. It is an inexpensive, stable, and readily available drug that rapidly achieves therapeutic concentrations in virtually all body tissues and fluids (including abscess cavities) after rectal, oral, and intravenous administration. It is compatible with all other antimicrobial agents and is rapidly bactericidal for all anaerobic micro-organisms.¹ Unlike many other agents that show in vitro activity against *C. tetani*, however, it is non-toxic, and its activity in vivo is not prejudiced by such factors as pH (as are, for example, erythromycin and lincomycin), or inactivating enzymes (as are, for example, β -lactam agents). Moreover, its narrow spectrum of activity (it is inactive against aerobes and facultative anaerobes) ensures that conventional courses of the drug do not interfere with normal bacterial floras and do not induce suprainfection. Resistance to metronidazole is rare. It has been used successfully in preventing and treating experimental tetanus in mice.³

Thus for the management of tetanus metronidazole seems to fulfil the basic requirements of rational, effective, and safe treatment (Abdulrahim, paper presented at symposium on anaerobic infection,

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