peritonitis in patients undergoing continuous ambulatory peritoneal dialysis) may require urgent "blind" treatment. Vancomycin has been recommended for these circumstances and is effective.¹¹³ The choice of antibiotics should be influenced by the site of infection to ensure adequate penetration: neonatal infections due to coagulase negative staphylococci have responded to netilmicin (which was more active than gentamicin),⁵ and for other infections antibiotics such as rifampicin, chloramphenicol, and trimethoprim should be considered. Some new members of the quinolone groups (for example, ciprofloxacin) also show good activity against coagulase negative staphylococci in the laboratory and may have a place in treatment.¹⁶

One unexplained problem is the differing sensitivity pattern in coagulase negative staphylococci for flucloxacillin and cephalosporins. In *Staph aureus*, resistance to cephalosporins normally parallels resistance to flucloxacillin, but this is not always the case in vitro in coagulase negative staphylococci.¹⁷ It has been suggested that cephalosporins should not be used clinically when laboratory tests show resistance to flucloxacillin.⁷¹⁷ The problem needs to be considered carefully since many coagulase negative staphylococci are now multiresistant but are often sensitive in vitro to parenteral cephalosporins such as cephmandole or cefuroxime.⁵ I believe that cephalosporins should not be used to treat infections due to methicillin resistant *Staph epidermidis* unless there is evidence that they are clinically effective, but retrospective analysis of patients with coagulase negative staphylococci infections resistant to methicillin treated with cephalosporins may help. Many orthopaedic patients having prosthetic surgery are given prophylactic cover with cephalosporins, and analysis of the sensitivity patterns of coagulase negative staphylococci isolated as pathogens from these patients—even though this is an uncommon infection—will be of interest. Other questions include the use of biotyping; will further identification of pathogenic isolates to species level help define the pathogenesis of infection, as happened with *Streptococcus bovis* and carcinoma of the bowel? Are antibiotic resistant isolates more likely to cause infection than antibiotic sensitive strains, or is resistance in coagulase negative staphylococci secondary to previous exposure to antibiotics?⁸ Increasing interest in and knowledge of coagulase negative staphylococci as pathogens should help resolve these problems now they have been accepted as pathogens.

A J DAVIES

Consultant Microbiologist,
Sandwell District General Hospital,
West Midlands B71 4HJ

- Karchmer AW, Archer GL, Dismukes WE. Staph epidermidis causing prosthetic valve endocarditis: microbiologic and clinical observations as guidelines to therapy. *Ann Intern Med* 1983;98:447-55.
- Fitzgerald RH, Nolan DR, Ilstrup DM, Van Scoy RE, Washington JA, Coventry MB. Deep wound sepsis following total hip arthroplasty. *J Bone Joint Surg* 1977;59A:847-55.
- Bayston R, Leung TSM, Wilkins BM, Hodges B. Bacteriological examination of removed cerebrospinal fluid. *J Clin Pathol* 1983;36:987-90.
- Rubin J, Rogers WA, Taylor HM, et al. Peritonitis during continuous ambulatory peritoneal dialysis. *Ann Intern Med* 1980;92:7-13.
- Davies AJ, Ward-Platt M, Kirk R, Marshall R, Speidel BD, Reeves DS. Is coagulase negative staphylococcal bacteraemia in neonates a consequence of mechanical ventilation? *J Hosp Infect* 1984;3:260-70.
- Baumgart S, Hall SE, Campis JM, Polin RA. Sepsis with coagulase negative staphylococci in critically ill newborns. *Am J Dis Child* 1983;137:461-3.
- Wade JC, Shimpff SC, Newman KA, Wiernik PH. Staphylococcus epidermidis: an increasing cause of infection in patients with granulocytopenia. *Ann Intern Med* 1982;97:503-8.
- Eykyn SJ. Infection and intravenous catheters. *J Antimicrob Chemother* 1984;14:203-8.
- Archer GL, Karchmer AW, Vischniavsky N, Johnston JL. Plasmid pattern analysis for the differentiation of infection from non-infecting Staph epidermidis. *J Infect Dis* 1984;149:913-20.
- Baird-Parker AC. The basis for the present classification of staphylococci and micrococci. *Ann NY Acad Sci* 1974;236:7-14.

- Kloos WE, Schleiffer KH. Simplified scheme for routine identification of human Staphylococcus species. *J Clin Microbiol* 1975;1:82-8.
- Marples RR, Richardson JF. Evaluation of micro-method gallery (API Staph) for the identification of staphylococci and micrococci. *J Clin Pathol* 1982;35:650-6.
- Gruet LD, Bartlett R, Aycliffe GAJ. Species identification and antibiotic sensitivity of coagulase negative staphylococci from CAPD peritonitis. *J Antimicrob Chemother* 1984;13:577-84.
- Richardson JF, Marples RR. Changing resistance to antimicrobial drugs and resistance typing in clinically significant strains of Staph epidermidis. *J Med Microbiol* 1982;15:475-84.
- Naidoo J, Noble WC. Transfer of gentamicin resistance between coagulase negative and coagulase positive staphylococci on skin. *J Hyg (Camb)* 1981;86:183-7.
- Barry AL, Jones RN, Thornsberry C, Ayers LW, Gerlach EH, Sommers HM. Antibacterial activity of ciprofloxacin, norfloxacin, oxolinic acid, cinoxacin and nalidixic acid. *Antimicrob Agents Chemother* 1984;25:633-7.
- Keane CT, Cafferkey MT. Re-emergence of methicillin resistant Staph aureus causing severe infection. *Journal of Infection* 1984;9:6-16.
- Frangillo RF, Bianchi P, Moretti A, Pasticci MB, Ripa S, Pauluzzi S. Cross resistance between methicillin and cephalosporins for staphylococci; a general assumption not true for cefamandole. *Antimicrob Agents Chemother* 1984;25:666-8.

Does nicotine chewing gum work?

Nicotine chewing gum (Nicorette) has been introduced as a prescription only aid to stopping smoking in several countries, most recently the United States and Australia. In Britain it has been available since 1980, but its status has remained controversial and uncertain.¹ The Advisory Committee on Borderline Substances has advised that, together with other antismoking preparations, it should not be regarded as a drug and thus is not properly chargeable to the NHS. During the summer of 1984, 10 cases about the prescription status of nicotine chewing gum were argued before two independent tribunals, the results prolonging the controversy. In six cases it was ruled that nicotine chewing gum should not have been prescribed on the NHS and in the other four that it was correctly prescribed on the NHS. In one case the tribunal found that tobacco dependence should be considered as a disease and that nicotine chewing gum, where necessary, was the most effective treatment so far evolved: "we regard the success rate as small but significant and likely to be the more so in general use among general practitioners." Nicotine chewing gum has now been included in the "blacklist" of drugs that doctors are no longer able to prescribe on the NHS; they remain free to prescribe it on private prescription. So does nicotine chewing gum have a useful contribution to make to stopping smoking? Does real doubt remain about its effectiveness?

The rationale for nicotine chewing gum stems from evidence on the part played by nicotine in smoking.² If some of the difficulty in stopping smoking is due to withdrawal of nicotine then its temporary replacement should help. Nicotine chewing gum could not be expected to "work" in some simple, absolute sense, however, since its effect will depend on the user's motivation to stop smoking, compliance with instructions, and expectations of the gum. How does it work in practice?

Specialised smokers' clinics have achieved encouraging results with the gum, with one year abstinence rates as high as 50%, 49%, and 47%.³⁻⁵ This is not just a placebo effect. Of five published placebo controlled trials in clinics, the nicotine gum was better than placebo at the end of treatment in all five, and significantly better at six months' follow up in four and at 12 months in two.^{4,8} Other evidence reinforces the conclusion that it has a specific effect. It can produce blood nicotine concentrations comparable with those achieved by smoking,⁹ it alleviates withdrawal symptoms better than placebo,¹⁰⁻¹² and it is rated as more satisfying, helpful, and unpleasant than placebo.^{5,7,13,14}

If results in smokers' clinics seem fairly straightforward those in settings with less support are more interesting. Less intensive attempts to help people give up smoking achieve lower abstinence rates whatever method is used. Not surprisingly this is reflected in abstinence rates found when nicotine chewing gum is used in conjunction with different levels of support. At least three distinct levels of support can be identified in published reports: intensive support offered by specialised smokers' clinics,^{3-5 7 8 13 15 16} minimal support (some follow up but in a non-specialist setting),¹⁷⁻¹⁹ and little or no support, where the gum is offered as an adjunct to advice, usually from doctors.^{14 19-21} If the results of the published studies in each category are pooled giving totals of 3120, 239, and 1226 patients respectively then a trend emerges. The long term abstinence rate is 27% when nicotine chewing gum is given with intensive, specialised support, 21% with minimal support, and 10% as an adjunct to advice.

A success rate of 10% is lower than that achieved in smokers' clinics but it would be of enormous clinical importance if it was generally applicable to patients in general practice. Does the evidence suggest that nicotine chewing gum has a useful effect when used as an adjunct to advice?

Russell and colleagues showed that, added to simple advice given by a general practitioner, the offer of nicotine chewing gum increased the long term abstinence rate from 4% to 9%.²¹ Furthermore, this result was achieved when half of those offered gum did not even use it. Among those who used more than one box the success rate was an impressive 24%. Another study showed an advantage for nicotine chewing gum compared with placebo at three months when offered with advice by dentists.²² Yet in the British Thoracic Society's hospital clinic based trial in patients with diseases related to smoking neither placebo nor active gum improved results over those with advice.²⁰ The only placebo controlled trial of the gum in general practice was inconclusive: it showed a non-significant advantage for nicotine gum over placebo at six months (10% v 8%), but the results are difficult to interpret because of the small sample size. These figures rule out a large effect but are consistent with the possibility of a small one—which would still be useful.^{23 24}

The overall results from very different kinds of studies are encouraging even if they leave some questions unanswered. "Does the gum work?" is perhaps the wrong question. We should be asking how it works, and to what extent, in different conditions. It certainly has a specific effect, but success rates are lower when it is handed out to unselected smokers without support or follow up. Yet even in general practice it may be helpful to those who actually use it. We know it is most effective when given to selected smokers strongly motivated to stop with detailed instruction, monitoring of progress, and support by experienced therapists. Perhaps some of these conditions may be achieved in general practice. Careful thought is needed on how best to deliver nicotine chewing gum to those who genuinely need it.

MARTIN RAW

Clinical Psychologist and Research Fellow,
St George's Hospital Medical School,
London SW17 0RE

1 Anonymous. Nicotine chewing gum [Editorial]. *Lancet* 1985;ii:320-1.

2 Russell MAH, Feyerabend C. Smoking as a dependence disorder. In: Ramstrom LM, ed. *The smoking epidemic. A matter for worldwide concern*. Stockholm: Almqvist, 1980:74-80.

3 Killen JC, Maccoby N, Taylor CB. Nicotine gum and self-regulation training in smoking relapse prevention. *Behaviour Therapy* 1984;15:234-48.

4 Fagerström KO. A comparison of psychological and pharmacological treatment in smoking cessation. *J Behav Med* 1982;5:343-51.

- 5 Jarvis MJ, Raw M, Russell MAH, Feyerabend C. Randomised controlled trial of nicotine chewing gum. *Br Med J* 1982;285:537-40.
- 6 Fee WM, Stewart MJ. A controlled trial of nicotine chewing gum in a smoking withdrawal clinic. *Practitioner* 1982;226:148-51.
- 7 Schneider NG, Jarvik ME, Forsythe AB, Read CL, Elliott ML, Schweiger A. Nicotine gum in smoking cessation: a placebo controlled double blind trial. *Addict Behav* 1983;8:253-61.
- 8 Hjalmarson AIM. Effect of nicotine chewing gum in smoking cessation. *JAMA* 1984;252:2835-8.
- 9 Russell MAH, Feyerabend C, Cole PV. Plasma nicotine levels after cigarette smoking and chewing nicotine gum. *Br Med J* 1976;ii:1043-6.
- 10 West RJ, Jarvis MJ, Russell MAH, Carruthers ME, Feyerabend C. Effect of nicotine replacement on the cigarette withdrawal syndrome. *Br J Addict* 1984;79:215-9.
- 11 Hughes JR, Katsukami DK, Pickers RW, Krahn D, Malin S, Leiknic A. Effect of nicotine on the tobacco withdrawal syndrome. *Psychopharmacology* 1984;83:82-7.
- 12 Schneider NG, Jarvik ME, Forsythe AB. Nicotine vs placebo gum in the alleviation of withdrawal during smoking cessation. *Addict Behav* 1984;9:149-56.
- 13 Russell MAH, Wilson C, Feyerabend C, Cole PV. Effect of nicotine chewing gum on smoking behaviour and as an aid to cigarette withdrawal. *Br Med J* 1976;ii:391-3.
- 14 Jamrozik K, Fowler G, Vessey M, Wald N. Placebo controlled trial of nicotine chewing gum in general practice. *Br Med J* 1984;289:794-7.
- 15 Westling H. Experience with nicotine-containing chewing gum in smoking cessation. *Läkarmidningen* 1976;73:2549-52.
- 16 Raw M, Jarvis MJ, Feyerabend C, Russell MAH. Comparison of nicotine chewing gum and psychological treatments for dependent smokers. *Br Med J* 1980;281:481-2.
- 17 Puska P, Björqvist S, Koskela K. Nicotine-containing chewing gum in smoking cessation: a double-blind trial with half-year follow-up. *Addict Behav* 1979;4:142-6.
- 18 Malcolm RE, Sillett RW, Turner JAM, Ball KP. The use of nicotine chewing gum as an aid to stopping smoking. *Psychopharmacology* 1980;70:295-6.
- 19 Fagerström KO. Effects of nicotine chewing gum and follow-up appointments in physician based smoking cessation. *Prev Med* 1984;13:517-27.
- 20 British Thoracic Society Research Committee. Comparison of four methods of smoking withdrawal in patients with smoking related diseases. *Br Med J* 1983;286:595-7.
- 21 Russell MAH, Merriman R, Stapleton J, Taylor W. Effect of nicotine chewing gum as an adjunct to general practitioners' advice against smoking. *Br Med J* 1983;287:1782-5.
- 22 Christen AG, McDonald JL, Olson BL, Crook CA, Stookey GK. Efficacy of nicotine chewing gum in facilitating smoking cessation. *J Am Dent Assoc* 1984;106:594-7.
- 23 Raw M. Nicotine chewing gum in general practice. *Br Med J* 1984;289:1307.
- 24 Fowler G, Vessey M, Wald N. Nicotine gum in general practice. *Br Med J* 1984;289:1308.

Postpartum mental disturbances and hormone changes

Eighteen times as many women are admitted to mental hospitals in the first month post partum as in each month of pregnancy.^{1 2} For centuries the puerperium has been known to be a most vulnerable period in a woman's emotional life, but the first detailed description of psychotic illness after childbearing appears to have been presented by Louis Marcé in 1858.³ He observed 44 cases, noted the association between psychiatric symptoms and the onset of lactation, and concluded that postpartum psychosis was determined by organic factors and constituted a disease entity. This concept gradually fell into disrepute, and most modern writers regard postpartum psychosis as an affective or schizophrenic disorder.⁴ Fortunately, the condition is relatively rare, but even so one or two of every 1000 women who give birth develop psychosis within six months after delivery.^{1 2}

Far more commonly, relatively mild and transient changes of mood including depression with episodes of weeping develop a few days after delivery. These mood changes affect 50-70% of parturient women⁵⁻⁷; they are usually brief, have a benign course, and have been named the "maternity blues,"⁸ "third day blues,"⁹ or the "transitory syndrome."¹⁰ Since the changes in mood coincide with profound changes in a wide range of hormones and other humoral agents related to pregnancy a causal link has been supposed probable.¹¹

The rate of disappearance of the different substances varies considerably depending on their half life in the blood, and this in turn has two components: a rapid first half life, representing the phase of removal from the blood compartment, and a longer second half life, representing removal from the extravascular compartments. Pregnancy associated