women need to be advised that a caesarean section is not a panacea. These apparently unduly high rates of operative vaginal delivery in private practice could be reduced, with benefit for mothers, by devising system changes that relieve the pressures of private practice in obstetrics. These changes should help obstetricians reduce their use of interventions in the process of vaginal delivery that are not supported by reliable evidence.

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Quinolone ear drops for chronic otitis media

They are safer and more effective than aminoglycosides

An estimated 1.5% of the adult population in the United Kingdom has active chronic otitis media with perforated tympanic membranes; this is comparable to the prevalence in western Europe and the United States. Although surgery is often necessary, antibiotic ear drops are frequently prescribed to control the discharge that patients may have with this condition. Until recently aminoglycoside ear drops were widely used, but concerns about ototoxicity, which occurs rarely, have restricted their use. Quinolone ear drops are an effective alternative, and there is good evidence from randomised controlled trials that they are the best choice for treating chronic middle ear infections.[1] They are already in use in the United States, Canada, New Zealand, Japan, and other countries, although they are still not available in the United Kingdom because they have not been licensed by the Medicines Control Agency.

The principal organisms isolated from patients with chronic otitis media are *Pseudomonas aeruginosa*, *Staphylococcus aureus*, and other Gram negative organisms, chiefly proteus. Pseudomonas, the pathogen most commonly identified, is potentially difficult to eradicate and develops resistance comparatively quickly to a variety of antibiotics.[2] It is now recognised that patients with chronic ear infections, irrespective of the type of tympanic membrane perforation (central or attic), are never "safe" from intracranial complications.[3] Eradication of the infection should therefore be the goal. Although aminoglycoside eardrops, particularly gentamicin, are effective in pseudomonal infections, recent reports from two retrospective studies have confirmed that ototoxicity occurs with topical gentamicin and primarily affects the vestibular system.[4 5] There have been a few case reports of ototoxicity occurring in humans treated with neomycin or framycetin, the other aminoglycosides in use; and recent studies on animals using comparable doses to that of ear drops have confirmed this.[6 7] The potential medicolegal implications of ototoxicity, therefore, have created a dilemma: we need to determine which topical antibiotic is safe and effective in treating patients with chronic discharge from their ears.

Ciprofloxacin and ofloxacin ear drops have several advantages over aminoglycosides. The Cochrane systematic review on interventions in chronic otitis media shows that quinolone ear drops are more effective than non-quinolone agents both in reducing ear discharge and in eradicating bacteria (data from five randomised controlled trials: odds ratio 0.26, 95% confidence interval 0.16 to 0.41).[1] It also confirmed that antibiotic ear drops were more effective than systemic antibiotics in chronic otitis media. Results from studies in animals and humans have so far failed to show any ototoxicity resulting from quinolone ear drops.[8]

Among the quinolones ciprofloxacin, apart from having the greatest activity against pseudomonas, is effective against *Staphylococcus aureus*, the other major pathogen in chronic otitis media.[9] Recent studies have failed to show that oral ciprofloxacin has any deleterious effects on growing cartilage in children, and with the comparatively small doses used in topical application, it is likely soon to be officially recognised as safe for paediatric use.[10] In the United States topical ofloxacin has already been approved for the treatment of otorrhoea after grommet insertion in children older than 1 year (although in chronic middle ear infections it can only be used in children older than 12 years).

On the other hand, caution must be exercised so that quinolone ear drops are not used inappropriately because of the risk of promoting resistance both for the patient and the community. Resistance to ciprofloxacin in pseudomonas strains (arising from mutation of the bacterial enzymes involved in DNA replication, gyrase and topoisomerase), is a growing problem. Roughly 20% of pseudomonas isolates identified in hospitals in Europe and the United States are resistant to ciprofloxacin, and most of these strains are multidrug resistant.[11]

Ciprofloxacin is already commonly used in respiratory, gastrointestinal, and ophthalmic practice: the additional use in otolaryngology would not add greatly to the pool of resistant bacteria. Curative doses of topical ciprofloxacin or ofloxacin might actually help eradicate chronic pseudomonas infections, thus reducing the problem of resistance associated with less effective antibiotics. Concentrations achieved through

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topical use are substantially higher than those achieved by using other forms of administration, and thus there is a good chance of eradicating the infection. If ciprofloxacin or ofloxacin fails, parenteral treatment with ceftazidime or imipenem can be used.[12]

Until topical ciprofloxacin is commercially available its use will remain restricted in the United Kingdom. Guidelines should be issued for the appropriate use of the drug in chronic otitis media with perforated eardrums, and its introduction for treating chronic otitis externa as well as its use in children should also be considered.

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Sources of *Toxoplasma gondii* infection in pregnancy

Until rates of congenital toxoplasmosis fall, control measures are essential

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Humans commonly acquire *Toxoplasma gondii* infection by ingesting food and water contaminated with the resistant stage of the parasite (oocyst) shed in the faeces of infected cats or by ingesting the encysted stage of the parasite (tissue cysts) in infected meat.[1] Cats can rapidly shed millions of oocysts after eating rodents, birds, or other animals infected with *T gondii*, and these oocysts can remain viable in the environment for many months.[1] Toxoplasma, listeria, and salmonella are the three most important pathogens carried by food in terms of illness and death in the United States and perhaps in Europe. Pork, lamb, and mutton are the most important sources of *T gondii* infection, along with game meats such as bear and feral swine.[2–4]

There is no test to distinguish infections from oocysts as opposed to tissue cysts. Therefore, epidemiological surveys remain the most useful way of assessing the relative importance of different sources of *T gondii* infection in human beings. This approach is not so effective when subjects are chronically infected and infections might have occurred many years before. The paper by Cook et al in this issue (p 142) reports risk factors for acute toxoplasmosis in women who acquired infection during pregnancy.[5] A total of 252 women with toxoplasmosis, along with 748 controls from Naples, Lausanne, Copenhagen, Oslo, Brussels, and Milan, were interviewed by telephone or in person. Overall, eating raw or undercooked beef, lamb, or other meats; contact with soil; and travel outside the country were major sources of infection.[5] Surprisingly, the risk of *T gondii* infection was increased in women who reported tasting or eating raw or undercooked beef, lamb, or game meats, but not pork. However, it is well documented that lamb and goat meat are sources of *T gondii*.[6] Finding beef as a source of infection is unexplained because *T gondii* has never been isolated from edible beef in Europe or North America.[1] Adulteration of beef by cheaper meats is not uncommon in grocery stores, and this is one possible explanation for the association of infection with beef. Further studies are needed in both beef and poultry, in live animals and retail meats, to adequately assess the role of these species in human infections.

In the past, pigs have been regarded as the most important meat source of *T gondii* infection in humans.[1] Fortunately, the prevalence of *T gondii* in market pigs (six month old pigs) is declining drastically in Europe and North America.[6 7] A higher risk of *T gondii* in women who ate raw sausages, salami, and cured meats is easily explained because the prevalence of the organism is high in older animals; for example, it was isolated from 17% of 1000 sows from one abattoir in the United States.[8] The authors point out that indoor pigs are less likely to harbour *T gondii*, and this is true if good biosecurity is practised. Consumers tend to thoroughly cook pork, a holdover from fears of acquiring trichinellosis. The consumption of unpasteurised milk or milk products, whether from goats, sheep, or cows, was an unexplained risk because tachyzoites, the stage most likely to be present in milk, are thought to be destroyed immediately by gastric juice.[5] However, recent evidence indicates that ingested tachyzoites can cause infection.[9] There has also been a case of acute toxoplasmosis in a breast fed infant.[10]

The association of cats and human toxoplasmosis is difficult to assess by epidemiological surveys because soil, not the cats, is the main culprit. Oocysts are not found on cat fur and are often buried in soil along with cat faeces.[11] Therefore, direct contact with cats is

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