Almost all medical practitioners will at some stage of their careers be asked to provide reports of medical evidence for courts, lawyers, insurers or employers. The requirements of these reports will vary between countries and legal systems; they may also depend upon whether or not the individual who is the subject of the report is a patient of the doctor providing it.

Consultant rheumatologists in the UK are asked by lawyers to provide expert witness reports in cases of alleged medical negligence, for personal injury claims after acute trauma (e.g. in cases of whiplash injury, alleged precipitation of arthritis or exacerbation of existing arthritis), where injuries are alleged to have occurred as a result of workplace practices and occasionally in criminal cases.

Employers and insurers frequently turn to rheumatologists for advice about whether or not to grant employees early retirement on medical grounds for disablement resulting from musculoskeletal conditions.

British insurers and solicitors are becoming well informed about the capabilities of rheumatologists in assessing their clients with ‘difficult’ musculoskeletal diagnoses such as fibromyalgia, work-related upper limb disorders and algodystrophy, as well as those with more clearly defined conditions such as rheumatoid arthritis. As a result, most rheumatologists will periodically receive requests for expert witness reports.

‘Ordinary’ witness statements are statements of fact, e.g. containing only a chronological account of a patient’s diagnosis and treatment, whereas an expert witness report is also a statement of opinion, e.g. about possible causes of an individual’s condition, its prognosis or the suitability of treatment given. In the UK, one may decline to provide an expert witness report, but not to testify in court if one’s report is used in evidence. Expert witness reports should be provided in Britain only at the written request of a legal practitioner (a solicitor), who must make clear to the expert whether he is acting for the plaintiff (the person or organization bringing the legal action for damages) or the defendant (against whom the action is being instituted). The provider of the expert witness report should write the report bearing in mind that it may eventually have to be defended under oath in court, before a judge with little understanding of medical facts and jargon. The report may be revised after discussion with the solicitors who commissioned it, after which it is exchanged with expert witness statements from the other side, for comment. When providing reports for employers or insurers, it is important for the expert in the UK to remember that if he has seen as a patient the individual who is the subject of his report, that individual is entitled to see the report before its release to the party commissioning it [1]. If in doubt, the medical expert should consult his defence organization.

It is beyond the scope of this editorial to describe in detail what an expert witness report submitted in the UK should contain; privately run courses abound in this field and the BSR organized a medicolegal course in the autumn of 1997 which included this topic. However, several issues need to be considered.

Should one supply expert witness reports on one’s ‘own’ patients? There seems to be no agreement on this point amongst doctors or lawyers. Certainly, there are hazards in doing so; a report may antagonize a patient and destroy the clinical relationship. The doctor’s natural inclination to support his patient to the hilt may lead to an unpleasant bumping up against the truth, particularly under cross-examination. Conversely, some lawyers feel that a specialist who already has a professional relationship with a patient is likely to be a more enthusiastic expert witness than one who is indifferent to the outcome of a case.

An expert should alter a report at the request of the commissioning solicitor only in ways which do not affect his original opinion, unless the solicitor brings to light some fact that necessitates alteration of that opinion.

Far-reaching changes are currently under way in the practice of law in Britain which affect doctors supplying expert witness reports in a number of ways:

- Legal aid for financial claims for personal injury is due to be withdrawn this year; aid for medical negligence claims is likely to be abolished within a few years. Simultaneously, the use of conditional fees is to be expanded from the present rudimentary base; solicitors will fund the costs of cases themselves and take a proportion (the ‘conditional fee’) of any award that their clients win. They will also have to bear part or all of the financial risk of losing cases (although the risk of having to pay the other side’s costs will be no higher than is currently the case with legally aided clients [2]). Solicitors will thus need to know from the start in particular cases whether or not they have a good chance of winning. In cases with medical evidence, they may seek the help of expert advisors to answer this question. The medical advisor could be open to suit if he does not deal adequately with the facts, strengths and weaknesses of a case [3] in a way which allows the solicitor to make an accurate risk appraisal.

- The Master of the Rolls, Lord Woolf, has recently published a report [4] into the workings of the civil justice system in the UK with the aim of making the process of claiming damages cheaper, faster and more accessible to members of the public. The role of the expert medical witness has come under scrutiny in his report: ‘I believe there is scope for the joint instructing of a single expert … in cases
where no controversial medical issue is involved' [5]. If this suggestion were taken up, it would represent a move from the adversarial British system of justice toward the inquisitorial system prevalent in continental Europe; however, this view of ‘one opinion per case’, rather than the plaintiff and the defence each instructing their own expert(s), has not been universally welcomed by British solicitors, who will not want to invest in opinions which do not favour their clients, since it is illegal for expert witnesses to receive conditional fees.

- The 'single expert' option accords with the English judicial view of the role of the expert witness as being to help the court, whether he is commissioned by the plaintiff or the defendant. A set of principles guiding the evidence of expert witnesses [6] has received widespread judicial approval in the UK; it is now considered de rigeur for experts to follow these seven 'Cresswell Principles' (named after the judge who first advocated them). The principles (abridged) are:

1. Expert evidence should be independent.
2. An expert witness should never assume the role of advocate.
3. An expert witness should state the facts upon which his opinion is based—and all the facts which could detract from his opinion.
4. An expert witness should make clear when an issue is outside his expertise.
5. If inadequate data exist to support an opinion, then an expert should indicate that his opinion is provisional. If the expert could not assert that his report contained the whole truth without some qualification, his report should state that qualification.
6. If an expert witness changes his opinion having read the report of the other side’s expert, he should transmit this change of view (via legal representatives) to the other side and to the court, without delay.
7. Where expert evidence refers to measurements or similar documents, these must be provided to the opposite party at the time of the exchange of reports.

In a recent decision [7], the House of Lords affirmed some of the Cresswell Principles in medical negligence when it pronounced that in cases involving the weighing of risks against benefits, judges would have to be satisfied that the experts had directed their minds to the question of comparative risks and benefits, and reached a ‘defensible conclusion’. Lord Browne-Wilkinson added that ‘if ... it can be demonstrated that the professional opinion is not capable of withstanding logical analysis, the judge is entitled to hold that the ... opinion is not reasonable or responsible’. In such cases, it is the expert’s judgement rather than his knowledge that is under test. However, where available, scientifically proven facts will form an important part of the expert’s defence of his opinions.

The effect of these changes is that expert witnesses must be seen to be truthful, and clearly expert in current practice in their field. They must be forthright about their own limitations and the limitations of their evidence, and must give clear reasons for their opinions. Although the eminence of an expert will doubtless continue to lend authority to his opinion, that authority may be undermined if these criteria are not fulfilled.

Medical negligence work in rheumatology is no different from that in other specialties. In a medical negligence action in the UK, the task of the expert is to provide information which will help the court to decide whether or not the plaintiff received medical care of a standard which was ‘in accordance with a practice accepted as proper by a responsible body of medical opinion skilled in that particular art’ [8] and if not, whether or not this failure caused harm. However, there are other areas of medicolegal work that particularly concern rheumatologists. These include claims against individuals or organizations for personal injury, claims against workers compensation insurance funds and claims against permanent health insurers for alleged unfit for work. Workers compensation insurance (which pays compensation for illness or injury suffered as a result of employment) has barely existed in Britain as a separate entity since 1948 when it became part of the state-funded health and welfare system; in other countries, including the USA and Australia, it is covered by separate insurance systems paid for largely by employers. The use of workers compensation insurance in the UK may increase as the Welfare State shrinks and companies insure against the inability of their employees to work through illness or injury caused specifically by their employment. Claims against workers compensation insurance funds for musculoskeletal conditions are expensive; according to Hadler [9], back pain and arm pain not associated with any single specific injuring event account for 20% of workers compensation insurance claims (but for 80% of payments) in the USA.

Workers compensation, personal injury and permanent health insurance claims for inability to work due to fibromyalgia and work-related upper limb disorder (RSI) pose considerable difficulties for insurers because of uncertainties surrounding the diagnosis and prognosis of these conditions. Additionally, in workers compensation claims for these diagnoses, it may be difficult to ascertain whether the condition occurred as a result of a specific employment. Rheumatologists are often better placed than other specialists to deal with such issues.

Payment for expert witness work is an important issue which is often dealt with inadequately by both doctors and lawyers. The expert in the UK should always aim to have a clear contract with the solicitor from the start, in order to maintain professional credibility and to avoid later disagreements. The contract is straightforward: the expert agrees to supply a report to the solicitor to cover the issues requested, on delivery and payment terms agreed in advance. The expert should develop and use standard agreement terms,
including a payment date and a statement that he does not wish his fee to be subject to assessment and taxation by the court (which can sometimes delay and reduce payment). It is important to obtain the solicitor’s written agreement in advance, however apparently pressing the need for an early report. The expert may quote an hourly rate or an overall fee for the work; solicitors prefer the latter. However, it is rarely possible to estimate precisely the amount of work one needs to put into a report, particularly if the case is complex. If the price quoted does not include consideration of further documentation, meetings with lawyers and court appearances, this must be made clear. Lastly, the contract for providing the report is with the solicitor, not with the solicitor’s client. Recovery of payment from a client who cannot or will not pay is the solicitor’s task and should not cause any delay in payment to the expert. A solicitor who breaches a contract with an expert may be reported to the Office for the Supervision of Solicitors in Leamington Spa, Warwickshire.

The expert witness working in the UK thus needs to be truthful, concise and an active expert in the field. He must give reasons for his opinions, citing published evidence wherever possible. Reports should be written for the intelligent layman, using short sentences, avoiding the use of jargon, and explaining all terms, if necessary in an accompanying glossary. The expert should agree a contract with the solicitor before undertaking the work. The careful evaluation of documented evidence in the preparation of a report (using medical journals and textbooks to back one’s opinions where possible) should be a rigorous stimulus to learning and expert witness work can be a useful supplement to income. However, there are no ‘easy’ reports; picking through the minutiae of evidence is essential, but can be very tedious. Lastly, the adversarial legal process in the UK contains elements of ruthlessness so the expert needs to maintain high standards of knowledge and judgement, or run the risk of possible public censure and ignominy.

In conclusion, although this editorial deals primarily with medical reports provided by rheumatologists within the legal system of the UK, rheumatologists in other countries may recognize many similarities to the requirements imposed upon them in their medicolegal work; the duty of professional integrity amongst doctors is universal.

A. BRADLOW
Department of Rheumatology, Royal Berkshire and Battle Hospitals NHS Trust, Battle Hospital, Reading RG3 1AG

REFERENCES

TREATMENT OF REACTIVE ARTHRITIS WITH ANTIBIOTICS

When discussing the causes of inflammatory rheumatic diseases, the role of microbes is often raised [1]. Among the many rheumatic diseases, the most informative in this connection are reactive arthritis (ReA) and Lyme arthritis, both of which develop following infection outside the joint. The bacteria which are most frequently involved in ReA are Chlamydia trachomatis (following infections of the urogenital tract) and enterobacteria such as Yersinia, Salmonella, Shigella or Campylobacter jejuni (following infections of the gut). Although in most cases ReA is a self-limiting disease, its mean duration of between 3 and 6 months, especially in a young population [2, 3], demands a treatment able to shorten the course of the arthritis. Furthermore, up to 20% of patients run a chronic course longer than 12 months [3].

The clear relationship between a specific bacterium and the occurrence of arthritis has prompted the question of whether antibiotics can be used to treat these forms of arthritis. This idea has received strong support from the demonstration of bacterial antigens in the joint by several techniques, suggesting that locally persisting bacterial antigen indeed drives the immunopathology (overview in [4]). For Borrelia burgdorferi, the causative agent for Lyme arthritis, and for Chlamydia trachomatis it has repeatedly been shown that bacterium-specific DNA and even RNA [5] can be found in synovial fluid or synovial membrane, suggesting that live bacteria are present. The situation for the enterobacteria is less clear at present. Former studies failed to find Yersinia DNA by polymerase chain reaction (PCR) [6], although Salmonella [7] and Campylobacter DNA [8] have been detected in this way in ReA joints. Very recently, Yersinia DNA has also been identified in a patient with ReA using a broad-spectrum PCR [9].

While it has become clear in recent years that Lyme arthritis can be prevented by early treatment of the
initial skin infection, and even the arthritis cured in the majority of cases by appropriate antibiotic treatment, the situation is less clear for ReA. Early studies demonstrated that short-term (1–2 weeks) antibiotic treatment of ReA does not influence the course and duration of the arthritis [10, 11]. Therefore, interest has focused on the question of whether arthritis can be prevented by antibiotic therapy of the preceding infection, or ameliorated by long-term antibiotic treatment.

Two studies from Salmonella outbreaks showed that antibiotic treatment of the initial infection, mostly with quinolones, did not prevent arthritis [12, 13]. Comparable data are not available for the other enterobacteria. However, in an animal model of Yersinia-induced arthritis, treatment with ciprofloxacin could reduce the incidence of arthritis only when given immediately after infection and before or shortly after the onset of clinical symptoms [14]. This is of doubtful clinical relevance as patients are rarely seen this early in their disease. Thus, it seems unlikely that antibiotic treatment of Salmonella or Yersinia enteritis would prevent arthritis.

Long-term antibiotic therapy over 3 months with tetracycline [2] or ciprofloxacin [15, 16] has been tested in enterobacteria-induced ReA in placebo-controlled double-blinded studies. Lauhio et al. [2] could find no effect of treatment with lymecycline in a small group of 11 patients with enteric ReA caused either by Yersinia or Campylobacter. Subsequently, Toivanen et al. [15] also found no effect of antibiotics in 31 patients with Yersinia-induced arthritis. However, the significance of the latter study is limited by the long disease duration of nearly 5 yr before treatment. In a very recent study [16], we also did not see any effect of a 3 month course of ciprofloxacin treatment (1 g/day) on the course of the arthritis caused either by Yersinia or Salmonella in 39 patients, independently of whether the disease duration was longer or shorter than 3 months. Furthermore, in the animal model of Yersinia-induced arthritis, even a very high dose of ciprofloxacin did not influence the course of established arthritis [14]. Interestingly, 15% of the animals treated with a lower dose, comparable to that used in humans, still continued to excrete Yersinia in the faeces. Thus, long-term antibiotic therapy, even with the currently most effective drugs for enterobacteria (the quinolones), seems not to be effective in enteric ReA.

It could be argued that the number of patients so far investigated was too small, that there are results for Yersinia but few for Salmonella and Campylobacter, and none for Shigella, and that all studies have included a rather small proportion of patients with early ReA. However, the conclusion drawn from the currently available data must be negative. The results of the ongoing European study on the treatment of ReA with azithromycin may give additional information.

The question arises why antibiotics seem to fail in enteric ReA despite the detection of the products of Yersinia, Salmonella and Shigella in the joint. For Yersinia, it has been shown in in vitro studies that rod-shaped bacteria without DNA can be detected for weeks by intracellular antibody staining [17]. Thus, the persistence of dead bacteria could be sufficient to stimulate a local immune response, possibly through lipopolysaccharide (LPS), even over the period of weeks and months of the self-limiting form of the disease. However, the persistence of high serum levels of IgA class antibodies in patients with ReA [18] and the continued excretion of Yersinia from the gut in animals treated adequately [14] suggests that, at least in some patients, live bacteria might persist outside the joint, e.g. in the intestinal mucosa [14]. It is not clear at the moment why these bacteria are resistant to the antibiotics.

The situation for Chlamydia trachomatis is more contradictory. ReA can certainly occur even after effective treatment of a C. trachomatis infection of the urogenital tract [19]. However, in a study performed in the Greenland population, which has a high frequency of HLA-B27, of venereal diseases, and of ReA, the incidence of post-venereal relapse of ReA was significantly reduced from 37% in untreated or penicillin (ineffective for Chlamydia) treated patients to 10% in infections treated short term with erythromycin or tetracycline, both antibiotics which are highly effective in the treatment of chlamydial infections [20]. Therefore, because C. trachomatis tends to persist for a long time in the urogenital tract and because it can cause not only arthritis, but also infertility, patients should be treated by appropriate antibiotics for 10–14 days if C. trachomatis is present. Another question is whether every patient with suspected ReA should be tested for C. trachomatis in the urogenital tract. Although the cost-effectiveness of such an approach has not been tested, these authors would advocate it. The possibility of detecting Chlamydia not only in a urogenital smear, but also in the first portion of the morning urine [21], would be worth considering it.

In two of the studies mentioned above, patients with Chlamydia-induced ReA were treated with lymecycline [2] or ciprofloxacin [16] vs placebo over 3 months. In the lymecycline study, with a relatively small number of 21 Chlamydia-induced arthritis patients, 50% of the antibiotic-treated group recovered by 15 weeks vs 39.5 weeks in the placebo group (a statistically significant difference). In the ciprofloxacin study, 66% of patients treated with antibiotics vs 33% in the placebo group showed improvement, a difference which was not significant probably because there were only 15 patients. In another study, patients with Chlamydia-induced ReA who had a disease duration of >6 months were treated with 200 mg/day of doxycycline either for 2 weeks or for 4 months [22]. Four out of 15 patients (27%) treated long term and 3 out of 17 (18%) treated short term went into remission; this difference was not significant. Furthermore, a recent report demonstrates that C. trachomatis persists in the synovial membrane of patients with ReA despite treatment with adequate antibiotics [23]. Thus, antibiotic treatment has been demonstrated to have some benefit in Chlamydia-induced ReA, although the situation remains uncertain.
The positive trend observed for antibiotic treatment in some of the studies would argue for the presence of live *Chlamydia* in the joint and would therefore be in accordance with the detection of chlamydial RNA in synovial membrane.

On present information, it does not seem likely that antibiotic treatment for longer than 3 months or use of the parenteral route would be more effective. However, one has to consider the possibility that bacteria persist in a latent state where they could be killed only by antibiotics in combination with stimulation of the immune response [24]. Furthermore, the possibility remains open, especially in HLA-B27+ chronic cases of ReA, that an autoimmune response takes over [4], thus rendering antibiotic treatment ineffective. There have been reports that antibiotics might also work through immunosuppression. However, until antibiotic treatment has clearly been shown to be effective, there is little point in discussing how it might or might not work.

In summary, there is increasing evidence that the pathophysiology might differ in *Chlamydia*-induced and enteric ReA. Available evidence suggest that antibiotics are not effective in enteric ReA, but that they might work in *Chlamydia*-induced ReA. However, final proof of their efficacy even in *Chlamydia*-induced ReA is missing; further study is required with larger patient numbers, preferably accompanied by PCR testing for *Chlamydia* in the joints, where this technique has not been applied previously. While the quinolones seem to be best for enterobacteria, *in vitro* studies suggest that tetracycline or macrolide antibiotics such as azithromycin might be superior for killing *Chlamydia*. To improve efficacy, even combination antibiotic therapy could be considered. In conclusion, long-term antibiotic treatment of ReA is not indicated in daily clinical practice, pending the results of further study.

J. Sieper and J. Braun

Department of Medicine, Rheumatology Section, University Hospital Benjamin Franklin, Hindenburgdamm 0, 12200 Berlin, Germany

REFERENCES


22. Wollenhaupt J, Hammer M, Pott HG, Zeidler H. A
