Chlamydia trachomatis reinfection rate: a forgotten aspect of female genital chlamydia management

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Contributors: Both authors managed the patient and wrote the manuscript.


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The The Society of Apothecaries Diploma examination in Genitourinary Medicine: death of the viva voce?

E HERIEKA

Editor,—The London Apothecaries Diploma in Genitourinary Medicine: death of the viva voce?...
A pilot study was conducted to compare the sensitivity of LCR testing for genital chlamydial infection in men, taken from the meatus itself against the standard technique. All male patients attending the GUM clinic over a 3 month period were included in the study if they had symptoms or signs compatible with chlamydia, or if a contact of a known case of chlamydia. A swab was taken from the urethra in the standard fashion. A second swab was taken from the meatus. After the sixth week of the study the order of the first and second swabs was changed, in order to evaluate any bias related to the order of the swabs. Specimens were processed using Abbott Laboratories LCx Chlamydia and handled according to the manufacturer’s guidelines.

Twenty five patients were asked to evaluate the swabs and to state which swab caused least discomfort or if there was no difference between them. A total of 208 men were recruited to the study. The overall prevalence of genital chlamydial infection in our population was 25% (52/208). A confirmed diagnosis was made by both of the samples performed from the same man were positive for chlamydia, or if one sample was positive together with an equivocal result. There were no false positive tests using these criteria giving all methods 100% sensitivity. There was no significant difference in detection rates between the subgroups where detection rates between the subgroups where the order of swabs was changed.

There was no significant difference in the sensitivity of samples taken from the meatus (100%) or from deep within the urethra (96.2%). Of the 25 men questioned two (8%) felt that the meatal swab caused more discomfort; 18 (72%) had a strong preference for the meatal technique. Only four men (16%) stated the swabs were similar in terms of discomfort.

A meatal swab for the detection of chlamydia is more acceptable to patients and has a similar sensitivity to the traditional technique of urethral sampling.

Urine samples, although non-invasive, are less likely to yield a positive diagnosis compared to urethral/meatal swabs and require extra processing by laboratories. In a high prevalence setting (such as a sexual health clinic), the meatal technique provides a specific, sensitive, and well-tolerated sampling method for the detection of chlamydia infection in men.

Further studies to confirm our findings in symptomatic, and asymptomatic, chlamydial infection are needed before introducing this technique as routine clinical practice.

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Letters, Notices

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Detection of chlamydia on meatal swabs

Editor,—The advent of ligase chain reaction (LCR) and other DNA technologies and their greater sensitivity has allowed the possibility of taking samples other than from the urethra in men, including urine samples.1,2 Although urine samples have the advantage of being collected non-invasively, the sensitivity of tests on such samples is less than for urethral samples.1 This may be due to the presence of inhibitors in urine.1 The reduced sensitivity on urine samples may be unacceptable, particularly if testing populations with a high prevalence of chlamydia infection. Furthermore processing of urine samples is more laborious. It is currently recommended that specimens for the detection of genital Chlamydia trachomatis infection by LCR are taken 2–4 cm from the urethral orifice and the swab rotated for 3.5 seconds.1 Many men are unable to tolerate this. It is often painful and may discourage patients from seeking medical attention.

A pilot study was conducted to compare the sensitivity of LCR testing for genital chlamydial infection in men, taken from the meatus itself against the standard technique. All male patients attending the GUM clinic over a 3 month period were included in the study if they had symptoms or signs compatible with chlamydia, or if a contact of a known case of chlamydia. A swab was taken from the urethra in the standard fashion. A second swab was taken from the meatus. After the sixth week of the study the order of the first and second swabs was changed, in order to evaluate any bias related to the order of the swabs. Specimens were processed using Abbott Laboratories LCx Chlamydia and handled according to the manufacturer’s guidelines.

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There was no significant difference in the sensitivity of samples taken from the meatus (100%) or from deep within the urethra (96.2%). Of the 25 men questioned two (8%) felt that the meatal swab caused more discomfort; 18 (72%) had a strong preference for the meatal technique. Only four men (16%) stated the swabs were similar in terms of discomfort.

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Urine samples, although non-invasive, are less likely to yield a positive diagnosis compared to urethral/meatal swabs and require extra processing by laboratories. In a high prevalence setting (such as a sexual health clinic), the meatal technique provides a specific, sensitive, and well-tolerated sampling method for the detection of chlamydia infection in men.

Further studies to confirm our findings in symptomatic, and asymptomatic, chlamydial infection are needed before introducing this technique as routine clinical practice.

Contributors: HIL, principal investigator and author; SM, investigator and edited final draft; JLD, data collection and obtained specimens; MMS, investigator and processed specimens.

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HIV positive and negative homosexual men have adopted different strategies for reducing the risk of HIV transmission

Editor,—To reduce the risk of HIV transmission, some homosexual men have adopted a strategy whereby they only have unprotected anal intercourse (UAI) with a person of the same HIV status (‘homosexual concordant UAI’). In London, homosexual men in a relationship are more likely to know the HIV status of their UAI partner than men not in a relationship and so establish concordance. However, this was not examined for HIV positive and negative men separately. A survey conducted in January-February 2000 among homosexual/bisexual men attending one of six gyms in central London, as part of an ongoing behavioural surveillance programme,3,4 has allowed risk reduction strategies to be considered by HIV status. A total of 792 homosexual men (median age 35 years) completed a confidential questionnaire (estimated response rate 50–60%).12; 16 (10.0%) were HIV positive, 477 (60.2%) HIV negative, while 169 (21.3%) had never had an HIV test (data missing for 20 men). Just over half the men (55.2%) said they were currently in a relationship with another man; this did not differ significantly by HIV status (p=0.1).

Our analysis focused on how sexual risk behaviour varied both by HIV as well as by relationship status. For HIV negative and positive men, UAI was classified as either concordant (UAI with a partner of the same HIV status) or non-concordant (UAI with a partner of unknown or discordant HIV status). Men reporting more than one UAI partner were classified as concordant only if all UAI partners were of the same HIV status as themselves. Men also indicated whether they had had UAI with a main partner, casual partner(s), or both. One third of all men (32.9%, 259) reported UAI in the previous 3 months; HIV positive men 42.1% (53/126) HIV negative 34.7% (165/475, data missing for two men) (p=0.1). Overall, concordant UAI was reported by 18.7% (89) of HIV negative and 21.4% (27) of HIV positive men (p=0.4). For HIV negative men, concordant UAI was predominantly reported by those in a relationship and rarely by men who were not (28.6% v 5.0%, p<0.001) (table 1). Concordant UAI was usually with a main partner alone. By way of comparison, HIV positive men were just as likely to report
Men reporting casual partners only or main and casual partners. Most men reported casual partners only.

*Data on UAI or relationship status missing for two HIV negative men.

Seroconcordance among negative men can only be established with confidence if both men were just as likely to report concordant UAI whether they were in a relationship or not was confirmed in a multivariate model. With HIV status and relationship as independent variables and concordant UAI as the dependent variable, the influence of HIV status and relationship was highly significant (p<0.001).

Table 1

<table>
<thead>
<tr>
<th>HIV negative men (n=477*)</th>
<th>HIV positive men (n=126)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Main only</td>
</tr>
<tr>
<td>Men in a relationship</td>
<td></td>
</tr>
<tr>
<td>reporting</td>
<td>n=276</td>
</tr>
<tr>
<td>Concordant UAI</td>
<td>27.1 (75)</td>
</tr>
<tr>
<td>Non-concordant UAI</td>
<td>8.0 (22)</td>
</tr>
<tr>
<td>Total</td>
<td>35.1 (97)</td>
</tr>
<tr>
<td>Men not in a relationship</td>
<td></td>
</tr>
<tr>
<td>reporting</td>
<td>n=199</td>
</tr>
<tr>
<td>Concordant UAI</td>
<td>2.5 (5)</td>
</tr>
<tr>
<td>Non-concordant UAI†</td>
<td>1.5 (3)</td>
</tr>
<tr>
<td>Total</td>
<td>4.0 (8)</td>
</tr>
</tbody>
</table>

*Data on UAI or relationship status missing for two HIV negative men.
†Men reporting UAI with a partner of unknown or predominantly with a partner of unknown HIV status.

Concordant UAI whether they were in a relationship or not, and 20.6% (p=0.09), often with a casual rather than main partner. The observation that HIV negative men were more likely to report concordant UAI in the context of a relationship while HIV positive men were just as likely to report concordant UAI whether they were in a relationship or not was confirmed in a multivariate model. With HIV status and relationship as independent variables and concordant UAI as the dependent variable, the influence of HIV status and relationship was highly significant (p<0.001).

Seroconcordance among negative men can only be established with confidence if both men were just as likely to report concordant UAI whether they were in a relationship or not was confirmed in a multivariate model. With HIV status and relationship as independent variables and concordant UAI as the dependent variable, the influence of HIV status and relationship was highly significant (p<0.001).

These data provide further evidence that HIV positive and negative homosexual men have both adopted HIV risk reduction strategies over the less, high risk sexual behaviour (that is, non-concordant UAI) was reported. Overall, non-concordant UAI was reported by 15.8% (75) of HIV negative and 22.7% (26) of HIV positive men (p=0). No significant differences were seen when stratified by either relationship or HIV status (table 1). In the multivariate model there was no significant association between non-concordant UAI and either HIV status (p=0.4) or being in a relationship (p=0.7).

Non-concordant UAI was usually reported with a casual partner with one notable exception. HIV negative men in a relationship were equally likely to report non-concordant UAI with a main partner alone (8.0%) as with a casual partner (6.5%) highlighting the continuing risk for HIV transmission between regular partners. However, for most men the risk of HIV transmission occurred in the context of a casual sexual encounter. Surveys conducted in the gyms in 1998 and 1999 revealed similar patterns of sexual risk behaviour (data available from authors). In conclusion, HIV negative and positive homosexual men have adopted different strategies for reducing the risk of HIV transmission with their sexual partners. HIV negative men predominantly reported concordant UAI with a main partner in the context of a relationship while HIV positive men were more likely to report concordant UAI with a casual partner. HIV prevention programmes need to reinforce risk reduction strategies, tailored to a person’s HIV status, while simultaneously addressing high risk sexual behaviour.*

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A mobile phone text message and Trichomonas vaginalis

EDITOR,—Over the past decade vast numbers of the general population have accepted the internet, email, and mobile phones. Among new patients attending our centre 70.3% (90/128) of men and 73.7% (90/123) of women provide mobile telephone numbers for contact. However, the use of mobile phones as a mechanism for contact tracing as far as I am aware has not been reported previously.

A 26 year old Afro-Caribbean man presented to our clinic and informed us that his girlfriend had attended a GUM clinic but unfortunately he did not know why. However, he informed us that he had a text message on his mobile. He duly brought up the message, which gave the woman’s clinic number and the KC60 diagnosis of C6A.

On examination there were no abnormalities seen, there were no polymorphs on microscopy, swabs for gonorrhoea, chlamydia, and trichomons were all clear. He was treated with a 5 day course of metronidazole as per MSSVD guidelines.

If this patient had turned up without a contact slip, epidemiological treatment of trichomons is unlikely to have been instituted and contact tracing would have been impossible. Thanks to the use of text messaging on this man’s mobile phone, appropriate treatment was initiated. Certainly patients and health advisers appreciate the security offered by mobile phones (no other family members can take the calls), the instant access, and it avoids additional paper work. The use of text messaging and mobile phones for contact tracing may be considered as an adjunct to contact slips in GU clinics.

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Chaperoning male patients

Editor, I was delighted to see the letter by Pink et al in the journal. My staff and I were becoming alarmed at the suggestion that male patients should have a chaperone when they are being examined by a male doctor. Was common sense finally leaving the specialty? There are thousands of consultations taking place throughout the country, in both primary and secondary care, where sexual issues are discussed. These often include a genital examination, and just because there is a problem found with one or two individual patients or doctors it doesn’t mean the whole national service has to be turned upside down. Surely, the last thing an overworked, under pressure, genitourinary medicine service needs is to have another section of its workforce having to be present in every consultation. Surely, when a problem is found with one or two doctors it doesn’t mean the whole national service has to be turned upside down.

There are very few patients who I think would feel more comfortable discussing a problem on a one to one basis, and some patients feel more comfortable discussing issues with another person handing me things during a genital examination, and just because there is a problem found with one or two individual patients or doctors it doesn’t mean the whole national service has to be turned upside down. Surely, the last thing an overworked, under pressure, genitourinary medicine service needs is to have another section of its workforce having to be present in every consultation. Surely, when a problem is found with one or two doctors it doesn’t mean the whole national service has to be turned upside down.

There are very few patients who I think would feel more comfortable discussing a problem on a one to one basis, and some patients feel more comfortable discussing issues with another person handing me things during a
Lichen sclerosus of the glans is significantly associated with penile carcinoma

EDITOR,—We read with interest the article by Riddell et al on 66 men with penile lichen sclerosus (PLS) attending a department of genitourinary medicine.1 In this study, the authors found no cases of malignancy. We have previously reported a retrospective study on the incidence of cancer on 86 cases of PLS retrieved from our histopathological files over a 10 year period (1987 to 1997).2 In that study, five cases showed malignant transformation—namely, squamous cell carcinoma (SCC) (three cases), in situ carcinoma (one case), and verrucous carcinoma (one case). Since that report, we decided to interview all PLS patients in order to rule out any further malignancy that occurred over time. Of 86 patients identified, 60 were evaluated at our clinic. Among these, we found three additional patients treated with partial penectomy for invasive SCC at other institutions. Their medical records were obtained together with paraffin embedded tissue samples to perform polymerase chain reaction (PCR) for human papillomavirus (HPV) testing. Clinical and laboratory information for these patients are summarised in table 1.

In this current study, eight (9.3%) out of 86 patients with PLS developed an epithelial cancer. Data analysis using the t test confirmed in our series a statistically significant risk of malignant degeneration (p < 0.05).

Clinically, the most common presentation of epithelial cancer arising with PLS was that of a infiltrated or ulcerated plaque followed, in decreasing order of frequency, by a nodular lesion or verrucous papules. The glans was the most commonly affected area. The average age of onset of PLS was 45 years, and that of development of cancer was 62 years. The average lag time from onset of PLS to cancer development was 18 years (range 10–34 years). This long latency time might explain the paucity of cases, mostly anecdotal, reported in the literature in the past 22 years (approximately 20)2,3 compared with our study, in which a long follow up disclosed 9.3% malignant degeneration in a series of 86 patients.

Also, the latency time was shorter in the HPV positive patients (average 15 years) compared with the HPV negative patients (average 23 years). The role of HPV in the pathogenesis of penile cancer is not fully understood. Some HPVVs, such as type 16 and 18, are likely to play a part, but not all penile carcinomas are HPV positive, as shown in our study. Also, PLS is not commonly associated with HPV infection.1 In our study we found five patients positive for HPV 16 infection, and this may have hastened the progression towards cancer resulting in a shorter lag time. However, routine HPV testing on larger series is necessary in order to draw any definitive conclusion.

Similarly to vulvar lichen sclerosus, which has been observed to undergo malignant degeneration in 3–6% of women,4 a likely malignant evolution of PLS should be considered. Careful and systematic histopathological evaluation of any ulcerated or indurated plaques developing within PLS is therefore strongly recommended. The association between PLS and cancer may very well be underestimated and there is a need for further investigation that includes long term follow up and routine PCR analysis for HPV infection.

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clermrci@dimtel.nti.it

Table 1 Clinical and histopathological features of eight cases of carcinoma on penile lichen sclerosus

<table>
<thead>
<tr>
<th>Patient No</th>
<th>Age of onset of PLS (years)</th>
<th>Age of onset of Ca (years)</th>
<th>Lag (years)</th>
<th>Site</th>
<th>Clinical aspect of malignancy on PLS</th>
<th>Histopathology</th>
<th>PCR testing for HPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1*</td>
<td>41</td>
<td>62</td>
<td>21</td>
<td>glans</td>
<td>fungating keratotic nodule with a white-yellowish hue slightly infiltrated verrucous papule</td>
<td>SCC</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>2*</td>
<td>36</td>
<td>59</td>
<td>23</td>
<td>glans</td>
<td>multiple elevated, indurated, and ulcerated plaques sharply circumscribed, erythematous, oozing, and slightly infiltrated plaque</td>
<td>SCC</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>3*</td>
<td>41</td>
<td>55</td>
<td>14</td>
<td>glans, coroynal sulcus</td>
<td>sharply circumscribed, erythematous, and ulcerated plaque</td>
<td>SCC</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>4*</td>
<td>39</td>
<td>49</td>
<td>10</td>
<td>glans, coroynal sulcus, inner aspect of the foreskin</td>
<td>sharply circumscribed, erythematous, and ulcerated plaque</td>
<td>SCC</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>5*</td>
<td>29</td>
<td>47</td>
<td>18</td>
<td>glans</td>
<td>exophytic verrucous whitish nodule sharply circumscribed, erythematous, and ulcerated plaque</td>
<td>SCC</td>
<td>Well differentiated</td>
</tr>
<tr>
<td>6</td>
<td>75</td>
<td>85</td>
<td>10</td>
<td>glans</td>
<td>exophytic whitish and indurated plaque</td>
<td>SCC</td>
<td>Undifferentiated</td>
</tr>
<tr>
<td>7</td>
<td>66</td>
<td>70</td>
<td>15</td>
<td>glans, coroynal sulcus</td>
<td>sharply circumscribed, erythematous, oozing, and slightly infiltrated plaque</td>
<td>SCC</td>
<td>Undifferentiated</td>
</tr>
<tr>
<td>8</td>
<td>33</td>
<td>67</td>
<td>34</td>
<td>glans, coroynal sulcus</td>
<td>sharply circumscribed, erythematous, oozing, and slightly infiltrated plaque</td>
<td>SCC</td>
<td>Undifferentiated</td>
</tr>
</tbody>
</table>

*Previously reported cases.1

PLS= penile lichen sclerosus; Ca= carcinoma; PCR= polymerase chain reaction; HPV= human papillomavirus; SCC= squamous cell carcinoma; VC= verrucous carcinoma.
Economic advantages of ligase chain reaction for diagnosis of genital Chlamydia trachomatis infection in GUM clinic attenders

EDITOR,—Genital infection with Chlamydia trachomatis is highly prevalent and recognised as a major threat to public health. 6 Dorfman DH, Glaser JH. Congenital syphilis presenting in infants after the newborn period. N Engl J Med 1999;341:1299–301

Accepted for publication 3 April 2001

Economic advantages of ligase chain reaction for diagnosis of genital Chlamydia trachomatis infection in GUM clinic attenders

EDITOR,—Genital infection with Chlamydia trachomatis is highly prevalent and recognised as a major threat to public health. There is now a wealth of evidence to demonstrate the superiority of DNA amplification techniques over antigen detection and culture.1 Only one large study has directly compared ligase chain reaction (LCR) with enzyme immunoassay (EIA) on identical clinical material and no studies have analysed the health economic impact of LCR in a genitourinary medicine (GUM) clinic population.

We studied the diagnostic effectiveness and cost of LCR compared with EIA. All GUM attendees undergoing sexual health screening were offered the opportunity to participate. Men presenting with dysuria or urethral discharge were defined as symptomatic. Swabs were collected in a pre-randomised order from the cervix in female patients and 4–5 cm proximal to the urethral meatus in male patients. Urethral specimens in male patients were evaluated for evidence of urethritis (defined by >4 polymorphs per high powered field).

LCR was performed using a standard immunoassay technique (Organon Technologies Inc) with confirmation of reaction with EIA. Accepted for publication 3 April 2001

The HSV antibody test is usually performed at the booking visit with other routine antenatal screening. This allows the parents time to adjust to the diagnosis before delivery, to consider family planning issues and interventions to minimise the risk of mother to child transmission. In addition, mothers with advanced immunosuppression benefit from antiretroviral therapy.

Although rarely reported, an HIV seronegative mother whose partner has undiagnosed HIV infection is at continued risk of infection. This may become more common in the future as antiretroviral therapy. In addition, mothers who become infected may need further tests to detect the infection late in pregnancy, are summarised in table 1.

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testing positive by LCR alone were retested by an alternative PCR assay for DNA sequences coding for the major outer membrane protein (MOMP) of Chlamydia trachomatis. A total of 148 male and 153 female patients were tested; 23/148 (16%) swabs from male patients and 10/153 (7%) from female patients were positive for Chlamydia trachomatis by LCR (see fig 1).

The sensitivity, specificity, and positive predictive values, and cost/test of LCR and EIA, respectively, were 100%, 100%, 100%, 100%, £5.64 and 58%, 100%, 95%, 100%, £4.05. Of 33 cases of chlamydial infection, 15 cases (12 (92.3%) in men and two (20.0%) in women) would have remained undetected if EIA had been used alone.

Although EIA tests cost less than LCR, the inferior detection rate for EIA (17 patients need to be screened per case detected) compared with LCR (nine patients screened per case detected) was also included in analysis of the results. The cost per case of chlamydial infection detected using EIA in this population was £6.65, compared with £50 for LCR.

In a hypothetical cohort of 100 GUM attendees, with an 11% prevalence of chlamydial infection (as in the present study), testing with EIA would cost £405 and would detect 6.4 of the 11 cases. Testing the cohort with LCR would cost £564 and detect all 11 cases. The additional cost of LCR is thus £199. The additional benefit is 4.6 additional cases detected. The additional cost of LCR per additional case detected is £34.

The clinic in which the study was conducted sees 6000 new attendees annually. Had EIA been used alone, 276 cases of chlamydial infection would have been missed in a one year period, at an estimated cost of over £82 000. A full economic evaluation would require that these long term health and resource costs be more thoroughly quantified and compared with other uses of NHS resources.

In summary, this study demonstrates that the overall sensitivity of LCR was double that of EIA, the previous standard diagnostic test used. Because of its improved sensitivity and increased case detection rate, the cost of LCR per case detected is equivalent to that of EIA in an urban UK GUM clinic population. Use of LCR as the diagnostic test of choice for both screening and clinical diagnosis in this setting thus represents a cost effective strategy.

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NOTICES
International Herpes Alliance and International Herpes Management Forum
The International Herpes Alliance has introduced a website (www.herpesalliance.org) from which can be downloaded patient information leaflets. Its sister organisation the International Herpes Management Forum (website: www.IHMF.org) has launched new guidelines on the management of herpesvirus infections in pregnancy at the 9th International Congress on Infectious Disease (ICID) in Buenos Aires.

Pan-American Health Organization, regional office of the World Health Organization
A catalogue of publications is available online (www.paho.org). The monthly journal of PAHO, the Pan American Journal of Public Health, is also available (subscriptions: pubsvc@tsp.sheridan.com).

Further details: ECEAR 2001 Conference Secretary, Division of Virology, NIBSC, Blanchard Lane, South Mimms, Potters Bar, Herts, EN6 3QG, UK.

International Congress of Sexually Transmitted Infections, 24–27 June 2001, Berlin, Germany
Further details: Congress Partner GmbH, Krausenstrasse 63, D-10117, Berlin, Germany (tel: +49-30-204 500 41; fax: +49-30-204 500 42; email: berlin@cpb.de).

1st Asia Pacific Forum on Quality Improvement in Health Care
The 1st Asia Pacific Forum on Quality Improvement in Health Care will be held from 19–21 September 2001 in Sydney, Australia. Presented by the BMJ Publishing Group (London, UK) and Institute for Healthcare Improvement (Boston, USA), with the support of the Commonwealth Department of Health and Aged Care (Australia), Safety and Quality Council (Australia), NSW Health (Australia) and Ministry of Health (New Zealand). Further details: quality@bma.org.uk; fax +44 (0) 7383 6869.

41st St Andrew’s Day Festival Symposium on Therapeutics
The 41st St Andrew’s Day Festival Symposium on Therapeutics will be held on 6–7 December 2001 at the Royal College of Physicians of Edinburgh. Further details: Ms Eileen Strawn, Symposium Co-ordinator (tel: 0131 225 7324; fax: 0131 220 4393; email: e.strawn@rcpe.ac.uk; website: www.rcpe.ac.uk).

10th International Congress on Behcet’s Disease will be held in Berlin 27–29 June 2002
Further details: Professor Ch Zouboulis (email: zoubbere@zedat.fu-berlin.de).

5th World Congress of Perinatal Medicine, 23–27 September 2001, Palau de Congressos de Barcelona - Avda Maria Cristina s/n, Barcelona, Spain
Further details: Dr Francesc Figueres, Congress Promotion Secretary (fax: +34.93.451.74 38; www.perinatal2001.com).

Second International Conference on Sexual Health, to be held in Bangkok, Thailand on 23–28 February 2002. Calls for abstracts deadline 1 September 2001
Further details: European Secretariat, Dr Richard Burack (tel: +44 (0) 20 8599 8029; email: siamcare@aol.com).

International Conference on HIV/AIDS 16–19 December 2001, Mumbai, India
Further details: Dr Chander P Puri, President, Indian Society for Study of Reproduction and Fertility, Institute for Reserach in Reproduction, Jehangir Merwanji Street, Parel, Mumbai 400012, India (Tel: 413770 (Direct); 413211-2-4-6-7; fax: 01-922-4964853 or 091-022-4139412; e-mail: vicinh@bom4.vsnl.net.in OR dirirr@wrcpe.ac.uk).

10th International Symposium on Human Chlamydial Infection, 16–21 June 2002, in Antalya, Turkey
The scientific programme will encompass the breadth of chlamydial research from clinical and epidemiological studies to molecular and cell biology of all species of Chlamydia. Further details: Professor A Demir Serter, Department of Clinical Microbiology and Infectious Diseases, Ege University, Faculty of Medicine, 35100 Bornova, Izmir, Turkey (Fax: 90 232 343 71 30; e-mail: ISHCICX@iitsa.ucsf.edu).

20th World Congress of Dermatology, Paris, 1–5 July 2002
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