PART 2F

Donovanosis (granuloma inguinale)

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Sex Transm Infect 2006;**82**(Suppl IV):iv21–iv22. doi: 10.1136/sti.2006.023135

Donovanosis or granuloma inguinale is caused by infection with *Klebsiella granulomatis*, formerly known as *Donovania granulomatis*, and *Calymmatobacterium granulomatis*, and was recently renamed following comparative DNA sequencing studies.[1] Alternative phylogenetic analyses have argued in favour of retaining the previous species name *Calymmatobacterium*.[2] The infection produces ulceration at the primary site of inoculation which is usually genital but may be oral, anal, or at other extragenital locations. Prominent local lymphadenopathy usually ensues, often leading to further ulcerative lesions in the skin overlying the nodes involved. In the absence of treatment the disease may spread locally and cause lymphoedema and genital mutilation. Rare cases of systemic spread have been reported. Transmission to infants during birth has been reported. The disease is rarely reported in the United Kingdom and patients seen are likely to have lived in one of the main endemic areas, which are currently in India, Papua New Guinea, among Australian aboriginals, Brazil, and South Africa. Screening is recommended only for patients presenting with unusual forms of ulceration where other diagnoses have been ruled out and a suggestive travel history is obtained. Screening of asymptomatic patients attending UK genitourinary medicine clinics is not indicated. Contacts of known cases should undergo careful examination.

RECOMMENDED TESTS FOR SUSPECTED CLINICAL CASES OF DONOVANOSIS

Examination of stained smears for Donovan bodies (evidence level IV, recommendation grade C)

This method was that originally described by Donovan in 1905[3] and has been the most widely used since then. Donovan bodies show up well with Giemsa, Wright's, and Leishman stains. Rapi-diff is a useful quick version of the Giemsa stain.[4] This approach to diagnosis has been recommended consistently as a simple and reliable method.

Specimen collection[5]

Surface debris from purulent ulcers should be removed gently with a cotton swab. After this the lesion may be pressed directly on to a glass slide, or material collected by rolling a swab over the lesion and then on to a slide.[6] The slide should be air dried and either stained immediately or, where this is not possibly, fixed in 95% ethanol for 5 minutes and stained later. This approach to diagnosis works well in patients whose lesions have plentiful Donovan bodies. Additional methods listed below are more suitable for cases with low numbers of Donovan bodies.

Biopsy (evidence level IV, recommendation grade C)

Biopsy may be considered for smear negative lesions, large lesions with easily removed friable tissue, any lesion where malignancy is suspected, and less common lesions of the mouth, anus, cervix, and uterus. Examination of biopsy material is more time consuming and may involve greater discomfort for the patient. Good results may be obtained by taking up to three 3–5 mm punch or snip biopsies[7] and placing them in 10% formalin/saline solution. Smears for more rapid diagnosis may be made by smearing the inferior surface of one of the biopsy specimens onto a glass slide, avoiding re-spreading of any area and stopping when the specimen becomes dry. Biopsy tissue may be examined with the stains recommended for smears and also with silver stains or slow Giemsa.[8]

Culture (not currently available in UK) (evidence level IIa, recommendation grade B)

Successful culture has been reported in human peripheral blood mononuclear cells[9] and in Hep-2 cells.[10] So far these techniques have only been successfully utilised by two research laboratories outside the United Kingdom (Darwin and Durban). Pretreatment of specimens with antibiotics such as vancomycin and metronidazole is necessary to remove contaminants.

PCR (not currently available in the UK) (evidence level IIa, recommendation grade B)

A polymerase chain reaction (PCR) test has been developed in Australia[11 12] and is used on a small scale in the Australian eradication programme. Testing facilities are located in Queensland and Perth.

RECOMMENDED SITES FOR TESTING

- Base or edge of ulcerated lesions.
- Regional lymph nodes if enlarged or ulcerated especially if ulcer gives negative results.

FACTORS THAT ALTER TESTS RECOMMENDED OR SITES TESTED

Culture and PCR are only available in special centres. Use of biopsy depends whether smear diagnosis is achievable and whether biopsy is acceptable to the patient. Sites tested depend on clinical presentation.

Risk groups

- Homosexual men (no alteration to standard recommendation)
- Sex workers (no alteration to standard recommendation)
- Young patients (no alteration to standard recommendation).

Other groups

- Pregnant women (no alteration to standard recommendation)
- Women with a history of hysterectomy (no alteration to standard recommendation)
- Patients who are known contacts of the infection (no alteration to standard recommendation).

Abbreviations: PCR, polymerase chain reaction

RECOMMENDATION FOR FREQUENCY OF REPEAT TESTING IN AN ASYMPTOMATIC PATIENT

Not applicable.

RECOMMENDATION FOR TEST OF CURE

Clinical assessment without sampling is sufficient.

STAKEHOLDER INVOLVEMENT

MSSVD Bacterial Special Interest Group. Before submission this guideline was circulated to Nigel O'Farrell and Francis Bowden, two leading international experts with knowledge of donovanosis. Their comments were noted and incorporated into the current document.

RIGOUR OF DEVELOPMENT

Search for evidence

The Medline database and Cochrane library were searched up to July 2002, using the MESH heading ''granuloma inguinale'' and free text searches using ''donovanosis'', ''granuloma inguinale'', ''calymmatobacterium'', and ''klebsiella granulomatis''. The author obtained and read all published papers dealing with diagnosis of donovanosis for a review published in 1991.[13] Other sources of information used were the STI Guidelines for the United Kingdom, Europe, United States (CDC), and WHO, ''Donovanosis control or eradication? A situation review of donovanosis in Aboriginal and Torres Strait Islander populations in Australia'' by Penny Miller, published by Office for Aboriginal and Torres Strait Islander Health, GPO 9848 (MDP 17), Canberra ACT 2601, and recent articles in press or in preparation sent to the author for comment or peer review.

Criteria for including/excluding evidence

All articles retrieved by the above search strategy that deal with diagnosis have been consulted as the total number is relatively small and manageable. No systematic reviews have been published in this area.

Methods used to formulate recommendations

Research on donovanosis has been conducted by only two specialists in the United Kingdom (JR and Dr Nigel O'Farrell) who have both agreed the recommendations in this guideline. Advice has also been obtained from Francis Bowden a leading Australian expert.

Health benefits, side effects, and risks of recommendations

Obtaining material for smear examination of Donovan bodies carries no hazards, involves minimal discomfort to patients, and allows confirmation of the diagnosis and planning of suitable treatment. Where biopsy is undertaken use of local anaesthetic may reduce discomfort. The use of punch biopsies is a standard dermatological procedure for diagnosis of skin diseases and carries the following potential hazards:

- Local bleeding and bruising in the surrounding tissues
- Pain associated with the surgery or the healing process
- Excessive scarring at the surgery site
- Allergic reaction to the numbing medicine or the surgical instruments
- Local infection in the surrounding tissues
- Damage to structures beneath the skin such as an artery or nerve
- Rare, unusual reactions, including possible death following any surgical procedure.

APPLICABILITY

The recommendations given above do not call for any changes in the current organisation of care.

AUDITABLE OUTCOME MEASURES

All cases of donovanosis should be subjected to clinicopathological review. Target 100%.

Source: National Guideline for the management of donovanosis (granuloma inguinale). Clinical Effectiveness Group (Association of Genitourinary Medicine and the Medical Society for the Study of Venereal Diseases). *Sex Transm Infect* 1999;**75**(Suppl 1):S38–9.

Potential conflicts of interest: none.

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Accepted for publication 31 August 2006

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