Letters to the Editor

Recruitment of only cytomegalovirus (CMV) negative semen donors

Dear Sir,

We are concerned that the recommendation of the British Andrology Society (BAS) (British Andrology Society, 1999) that only cytomegalovirus (CMV) negative semen donors be recruited will mean an unnecessary and dramatic decrease in number of donors. We reviewed the CMV status of the donors from one of the large semen banks from which we buy semen. A total of 43.5% of their donors are CMV positive. If the recommendation of the BAS were enforced this would mean a loss of just less than half the current donors. In addition, we reviewed the CMV status of our current recipients. A total of 45.5% (55 out of 121) of our current recipients are CMV positive. There is no need to use CMV negative donors for their treatment. Provided that recipients are screened and an appropriate donor chosen, we see no reason why CMV positive donors cannot still be recruited.

References


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Dear Sir,

We wish to respond to the letter to the editor from Dr Curson and Ms Karakosta rejecting the recommendation of the British Andrology Society (BAS) that it is preferable that semen from cytomegalovirus (CMV) seronegative donors is used for treatment purposes (British Andrology Society, 1999).

The aims of the BAS guidelines for the recruitment and screening of semen donors clearly state that these include the protection of recipients and offspring from infection (British Andrology Society, 1999).

CMV is the most common viral cause of congenital malformation (Rawlinson, 1999) with a significant proportion (30%) of these babies being born to mothers suffering recurrent infection (Casteels et al., 1999). All CMV seropositive individuals harbour CMV DNA (Larsson et al., 1998) and as CMV has been detected in semen (Mansat et al., 1997) all seropositive donors remain potentially infective throughout donation.

The consequences of congenital infection include second trimester abortion, neonatal death as well as mental retardation and motor and auditory deficits in surviving infants (Morita et al., 1998; Casteels et al., 1999). This morbidity is completely avoidable by the use of semen from seronegative donors and other than in exceptional circumstances (detailed in the guidelines) the BAS continues to recommend that only semen from CMV seronegative donors be used for donor insemination treatment (British Andrology Society, 1999).

Dear Sir,

We thank Dr Eileen McLaughlin for explaining clearly the concerns about transmission of cytomegalovirus (CMV) by donor semen. However, before we rush to exclude 43.5% of our current semen donors, may I ask her to quantify the risks.

What is the risk of a CMV seropositive man carrying the virus in his semen?

What is the risk of CMV DNA remaining in the samples used for insemination after the semen is prepared for intrauterine insemination using a gradient density preparation? Figures from Semprini et al. (Semprini et al., 1992) seem to imply that a very high percentage of the virus can be removed in this manner.

What is the risk of a CMV seropositive recipient woman being reinfected with such semen?

What is the risk in the general population, where most women and men do not know their CMV status, of having a CMV affected baby?

Given these statistics, what figure would she give as the percentage risk to a single CMV positive recipient woman

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Dear Sir,

The British Andrology Society (BAS) committee would like to emphasise to Dr Curzon and Ms Karakosta that the BAS guidelines (BAS, 1999) are not the views of a single individual. The BAS guidelines for the screening of semen donors (BAS, 1999) were compiled following a two-year long consultation period with the membership. In addition, expert opinion and advice was sought from associated specialists including virologists, microbiologists, geneticists, obstetricians, gynaecologists and clinical practitioners in genitourinary medicine. The guidelines were subjected to peer review prior to publication and have been endorsed in full by the Royal College of Obstetrics and Gynaecology Infertility Guidelines working group in the latest set of tertiary guidelines for assisted conception.

The main aim of the BAS in drafting these guidelines (BAS, 1999) was to reduce as far as possible the risk of a child suffering from a serious disability, which could have been avoided, not to facilitate donor recruitment. It is open to any practising clinician to disregard professional guidelines if they feel that they have sound reasons for doing so, and are willing to defend these reasons to colleagues and patients.

My answers to the authors’ queries are as follows:

(i) What is the risk of a cytomegalovirus (CMV) seropositive man carrying virus in his semen? Virtually all men excrete CMV in their semen immediately after primary infection (Lang and Kummer, 1972) and virus secretion has been shown to persist in semen for up to 14 months (Lang et al., 1974). Thereafter CMV seropositive individuals intermittently secrete virus in their semen and other bodily fluids due to either reactivation or reinfection (Lang and Kummer, 1975). CMV has been found both in extracellular fluid (Lang et al., 1974) and associated with non-sperm cells in semen (Rasmussen et al., 1995) in up to 33.5% of fresh samples tested (Yang et al., 1995).

(ii) What is the risk of CMV DNA remaining in the samples used for insemination after semen is prepared for intrauterine insemination using a gradient density preparation? In a recent study (Levy et al., 1997) the authors reported detection of CMV DNA in a sperm sample after centrifugation through a three-layer Percoll gradient. In their letter Dr Curzon and Ms Karakosta refer to a study concerning the removal of HIV RNA from semen, prior to insemination in the treatment of HIV discordant couples (Semprini et al., 1992). This method is not infallible—Chrystie and colleagues (Chrystie et al., 1998) reported the detection of HIV RNA in 40% of sperm samples prepared using density centrifugation from semen from HIV seropositive men. As the viral load in semen is different between HIV and CMV (Krieger et al., 1995) this may not be a valid comparison.

(iii) What is the risk of a CMV seropositive recipient woman being infected with such semen? The answer to this question is not known and a deliberate attempt to infect women by treatment with known viral positive sperm preparations would be unethical, though animal studies have shown this as a route of virus transmission (Young et al., 1977). It is the view of the BAS that, as sexual transmission of CMV in humans has been proven (Handsfield et al., 1985) and that infection in the first trimester of pregnancy has the highest risk of serious fetal abnormalities (Ahlfors et al., 1983), it would be wise to take steps to reduce this risk as far as possible.

(iv) What is the risk in the general population, where most women and men do not know their CMV status, of having a CMV affected baby? Studies in the developed world have shown that up to 2.2% of all babies born are congenitally infected with CMV (Lang, 1975, Alford et al., 1990, Demmler, 1991).

(v) Given these statistics, what is the percentage risk to a single CMV positive woman, using density gradient separated semen from a CMV positive donor, of having a CMV affected child? The answer to this question is not known but has been shown to be possible as secondary infection and subsequent congenital abnormalities have been documented (Ahlfors et al., 1999, Boppana et al., 1999). It is also the view of the BAS that it is not the size of the risk that it is important but that simple steps (already adopted by some clinics in the UK) can be taken to reduce this risk and the BAS feels that these steps should be taken.

(vi) And does she feel this level of risk justifies such a drastic culling of semen donors? For many centres that recruit their own semen donors this policy does not represent a ‘cull’ but is regarded as established best practice and will have no effect. However the authors clearly identify that there exists within the UK a major problem in recruiting semen donors. Many things contribute to this including payment restraint, the possibility of loss of anonymity and screening for HIV and other sexually transmitted diseases. The BAS feels that it is wrong to respond to these issues by exposing women and children to avoidable risk (however small) of serious harm (Peckham et al., 1987; Fowler et al., 1992).

References


On behalf of the British Andrology Society Committee

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