

WHERE STDs LEAD, IS HIV SURE TO FOLLOW?

This article is extracted from an interview by David Robbins with Professor Ron Ballard – Founder and Head of the National Reference Centre for STD: SAIMR and the University of the Witwatersrand.

AS A FAMILY PHYSICIAN, CAN YOU TELL YOUR patients what their chances of acquiring an HIV infection are? Will they understand what you mean?

The well-known relationship between the increased chances of contracting an HIV infection in the presence of an existing STD has been quantified more accurately.

In Gauteng, 6,4% of women attending antenatal clinics were found to be HIV-positive; whereas 35% of people attending STD clinics were HIV-positive.

The exponential increase in the risk of (heterosexual) HIV transmission is graphically illustrated by the following scenarios:

- If one partner is HIV-positive, there is a 1% chance of transmission.
- If one partner is HIV-positive and one partner has a genital ulcer, the chances of transmission jumps to 8%.
- If one partner is HIV-positive and both partners have genital ulcers, the chances of transmission leaps to 64% (8 X 8). For these partners to have intercourse twice is to virtually ensure transmission of the virus.

Clearly one of the key factors in managing the AIDS epidemic must be to control the prevalence of STDs.

The STD Reference Centre has accepted the 'Anderson equation'¹ as a framework for creating a rational action plan to decrease the prevalence of STDs (and therefore of HIV infection).

Anderson is a biologist from Cambridge University in England, and the equation is:

The reproductive rate of STDs (and HIV) = 'A' (the effectiveness of transmission) X 'B' (the average rate of sex-partner change) X 'C' (duration of infectivity).

Obviously, by reducing any one of the factors, the overall rate can be decreased.

'A' can be influenced by the use of condoms, and the avoidance of intercourse if genital ulcers are present; 'B' is influenced mainly by changes in the patterns of sexual behaviour; and 'C' can be changed by early recognition and treatment of STDs.

One of the approaches now adopted and being promoted throughout the country is the so-called 'syndromic approach' to the treatment of STDs.

For anyone trained in orthodox medicine, this is almost a heresy, as it promotes the treatment of 'symptoms' without first making a 'proper diagnosis'. It also implies that it is now 'acceptable' to use 'shotgun treatment' in certain instances. Some of our most revered and esteemed teachers must surely be turning in their graves!

Nevertheless, despite the inevitable over-treatment of STDs that will result, the syndromic approach may be the sledgehammer necessary to make a noticeable dent in the statistics of STD (and HIV) spread. The WHO has endorsed and is encouraging this new approach internationally.

Trained primary health care nurses will play a vital role both in treating patients with STDs and in the essential, but difficult, role of

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education. Ballard makes the point that, although South Africa has the best microbiological facilities in Africa, many of our northern neighbours have advanced way beyond us in effective behaviour change programmes, and that we have a lot to learn from them. (Could this have something to do with our neighbours having a deeper understanding of the belief systems and worldviews of different groups of people?)

'If we don't control STDs in South Africa?'

Ballard's chilling reply: 'We have the potential here for our AIDS epidemic to exceed what is happening in most African countries. All the ingredients for a massive epidemic are present – especially the impact of large social upheavals, high population mobility, urbanisation and migrant labour.'

'Any hope?'

'I firmly believe that if we can make inroads into the effective treatment of STDs, and into people's awareness of the AIDS epidemic and how they can protect themselves against it, we still have a chance of reducing the ultimate scale of the epidemic,' says Professor Ballard.

For further information regarding the syndromic approach to the treatment of STDs, or other information, contact:

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REFERENCE

1. Brunham RC, Nagelkerke NJD, Plummer FA, Moses S. Estimating the Basic Reproductive Rates of *Neisseria gonorrhoeae* and *Chlamydia Trachomatis*: The Implications of Acquired Immunity. *Sex Transm Dis* 1994; 21(6):354.

REPRODUCTIVE RATES OF STDs

REFLECTING ON THE ANDERSON EQUATION

MANY OF US HAVE LONG SUSPECTED THAT human beings are simply a convenient stepping stone in the evolution of certain organisms in their quest towards self-actualisation.

Forget about aliens invading our planet – worry about the aliens invading our bodies!

To think that these renegade bugs have been working to a blueprint all these centuries. The revelation of such deviousness can but be compared to the darkest plans hatched by Machiavelli or Beelzebub himself!

The ingenuity of a strategy by organisms which relies on perpetuating themselves through the sexual behaviour of the human species must surely rank in the Nobel Prize category.

Let us consider each component of the Anderson equation in turn from the organism's perspective.

A. THE RATE OF SEX-PARTNER CHANGE

AN STD CAN HAVE NO BETTER OPPORTUNITY TO reproduce itself than to take full advantage of commonly recurring aspects of human sexual

behaviour. Some examples: Adolescence – a time of adventure, of exploration, of 'fire in the loins' (so easily transformed from metaphor to reality!). Consider the fragile male ego whose continued existence is so often directly related to sexual prowess – whether real or imagined. Don't forget the downtrodden female who has to use her sexuality as a means to fulfilling her needs in other areas – whether for promotion in her career, to keep her man, or to have the baby she so desperately desires.

Another feature of human sexuality of which STDs take full advantage is poverty. While people still live in poverty or in disadvantaged circumstances, one of the few outlets or respites from living in survival mode is expression of their sexuality. (The fact that they simultaneously so often add another human statistic to their problems is irrelevant in that moment.)

The wicked conspiracy between STD organisms and the various yeasts used in fermenting sugar can only be hailed as the master-stroke of a genius. Through the resultant 'inhibited inhibition', the human sexual encounter occurs easily – before the partners realise what is happening.

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STDs know that most attempts to change human behaviour will be ineffective and have little impact.

B. THE EFFECTIVENESS OF TRANSMISSION

ONCE AGAIN STDs TAKE PITILESS ADVANTAGE OF THE human being's many frailties. One of these is denial. People often refuse to believe that they actually have an STD (even if someone as illustrious and authoritative as a family physician has told them so!). Another problem is social stigma. People have a real psychological hang-up about letting other people know that they are providing a safe haven for STD organisms in their bodies for fear of being labelled 'dirty', or 'loose', or worse. Of course, from an STD's point of view, the nooks and crannies of the female genital tract provide ideal hiding places, in which they can reproduce unhindered without the knowledge of their host(ess). Campaigns to promote widespread condom usage have the potential to be a real blow to the STD master-plan – but as this is just another form of human behaviour change they are actually not too concerned.

C. THE DURATION OF INFECTIVITY

STDs HAVE A PARTICULAR CONCERN ABOUT THIS because human beings have developed vari-

ous toxic chemicals to eradicate them. However, they also know that an important element of this aspect again revolves around human behaviour – in terms of early recognition and treatment of the problem – and that their chances of survival are therefore increased. STDs have also worked out self-defence measures to combat this chemical warfare and are constantly creating new bonds and alternate receptor sites in order to develop resistant forms. One of their greatest concerns is the possibility of effective vaccines being developed to combat them.

Although theoretical mathematical models explaining infectivity of an organism (or their reproductive rates) may be useful, and even helpful in determining what to do about them, they are usually based on several assumptions – many of which are related to human behaviour patterns. Family physicians and other primary care workers are in an ideal working situation to assess these behaviour patterns and to report on them. One of our colleagues may even stumble across a key observation in the laboratory of his or her practice which opens up new avenues of thought and possible interventions which could change the way all of us approach these issues.

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