CLARIFYING THE IMPORTANCE OF HPV VACCINATION

Dear Sir,

Dr Lahariya's editorial regarding the ethical soundness of mandatory vaccinations contains some incorrect assumptions about the nature of human papillomavirus (HPV).[1] The author implies that HPV is not an infectious disease. This is not correct. The World Health Organization states in its report on HPV vaccines: "HPV is one of the most common viruses infecting humans. It is sexually transmitted and highly infectious – its rate of transmission is several orders of magnitude greater than that of some other sexually-transmitted organisms, such as HIV. It affects a high proportion of sexually-active women and men, usually very soon after sexual debut. HPV infection is, however, not necessarily an indicator of sexual practice or promiscuity; transmission does not require full penetrative intercourse or many partners". The concern on the part of the World Health Organization emphasises the importance of vaccination against HPV.[2]

A second correction flows on from the first. As HPV is infectious, there is potential for protection of unvaccinated individuals and herd immunity is a prospect with HPV. Various papers have been published modelling the impact that HPV vaccination could have at a population level.[3-8] Newall et al critiqued papers published on the impact of HPV vaccination and emphasised the importance of measuring the effect of herd immunity.[6] The impact of herd immunity was modelled by demonstrating the effects of vaccinating different percentages of females only or females and males.[5,7] Taira et al demonstrated that the effects of herd immunity could considerably influence lifetime cervical cancer incidence.[8] These results are explained by Garnett, who states that herd immunity, and hence vaccine effectiveness, can be influenced by whether both males and females are vaccinated; the percentage of individuals vaccinated; at what point in one's sexual life they are vaccinated; the availability of screening for cervical cancer in the population; and distributions of infection.[3] While the model of herd immunity for HPV is a complicated one, it does exist.

HPV is important to vaccinate against, so much so that it may be a worthy candidate for mandatory vaccination. It has been argued that it is not ethical to mandate a vaccination that is not a direct threat to the majority of a population. However, US data shows that 64.6% of adolescents in Grade 12 have had sexual intercourse (32.8% in Grade 9, 43.8% in Grade 10, 55.5% in Grade 11).[9] Adolescents are most likely to engage in sexual intercourse with their peers, and most likely these are school peers. Thus HPV may be spread throughout a school – not a sub-population of adolescents. Data shows that the risk of contracting HPV is the same for a virgin having first sexual contact with a partner as it is for a previously sexually-experienced woman having sex with a new partner.[10] Adolescents do not need to have been sexually active for long periods of time to be at risk for HPV infection. In a study measuring the risk of HPV infection in females from their first male sex partner, 28.5% of women acquired HPV within a year, and 50% acquired HPV within three years without changing their sexual partner.[11] In addition, individuals who have not had penetrative sex, but who had participated in non-penetrative sexual activity, were also at an increased risk for HPV.[10] Neither using condoms nor monogamy successfully prevents against the spread of HPV. Winer et al showed that condom usage was ineffective at preventing HPV transmission.[10] In another study designed specifically to test the effectiveness of condom usage against the spread of HPV, Winer et al found that women whose partners used condoms 100% of the time were still at risk of contracting HPV, albeit reduced by 70%.[12]

In building cases against mandatory vaccination of HPV, comparisons between HPV and other infectious diseases, especially hepatitis B, have been made (hepatitis B vaccination is mandatory for entry into a middle school in the US). Some have argued that as HPV has a different natural history and epidemiology from hepatitis B, this comparison should not be used.[13] However, like HPV, hepatitis B is most commonly transmitted through sexual activity in adolescents. In relation to numbers, though, HPV is more prevalent than hepatitis B. The case for mandatory vaccination against hepatitis B in adolescents is weaker than HPV.

If health professionals want the respect of the scientific and non-scientific communities, they should be consistent when making recommendations for vaccination. Mandating vaccination for airborne communicable diseases only is perhaps one way, but, more importantly, recognising that sexual behaviour is a normal part of adolescent and young adult development, and protection against diseases spread by normal behaviour of all types should be provided without prejudice.

It is partially a result of misconstrued beliefs about HPV, and sexually-transmitted infections in general, that barriers exist to achieving a high uptake of HPV vaccination. If experts did a better job of communicating the realities of HPV and vaccination, we would be more successful in preventing the spread of genital warts, cancers and the distress these diseases cause.

Yours sincerely,

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