Proposed novel therapy for a sexually transmitted disease

Neisseria gonorrhoeae (NG) is one of the seven pathogens that cause sexually transmitted disease, also popularly known as venereal disease. The NG infections are contagious. Their prevalence is higher among women than in men, high among sexually active adolescents and closely associated with an onset of menses. According to the US Center for Disease Control and Prevention estimates, 334,826 cases of NG infections were reported in 2012 and infection rate has increased by 4.1% since 2011. These numbers will be much higher worldwide and all the numbers are likely to be underestimates. These infections have a high economic and human cost, in terms of medical treatments, productivity loss in the work place, pain, suffering and social stigma. Human Fallopian tubes are commonly involved in the NG infections. Left untreated, these infections can progress into salpingitis, pelvic inflammatory disease, increased risk of infertility, ectopic pregnancy, and so forth. Hematogenous disseminated infection can lead to several systemic illnesses and even death in some cases.

Antibiotics are used for treating the NG infections. Their usage is associated with adverse events, which can vary with an individual and the type of antibiotic used. Allergic reactions are the most common type of adverse reactions and they often require visits to hospital emergency rooms.

The possibility of using human chorionic gonadotropin (hCG), a pregnancy hormone, to treat NG infections came from the scientific studies, which showed that NG mimics hCG to enter the cells and then destroy them. Human Fallopian tube organ and cell culture experiments have demonstrated that hCG treatment prevents the NG entry into the cells. Based on this evidence, we recommend testing hCG in clinical trials on NG infected women. hCG is an inexpensive and a non-toxic molecule . It will be better tolerated than the antibiotics. hCG is relatively safe and already used for other clinical indications. If antibiotics must be used for whatever reason, then lower doses can be combined with hCG to reduce the expense, to decrease the antibiotic associated adverse events and the chances of developing resistance against NG. Finally, since hCG and antibiotics work by different mechanisms, the combination therapy can be more effective than single treatments.

Lower hCG doses (500 to 1000 IU) can be directly administered into the tubes and repeat it, if a single treatment does not resolve the infection. This route of administration may not have any adverse effects, as has been shown for intrauterine hCG administration to increase implantation and clinical pregnancy rates, both of which increased. So what is lost by testing hCG in clinical trials on infected women? After all, the use of antibiotics must be curtailed, whenever possible, to avoid developing NG resistance against antibiotics.

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