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SEXUAL BEHAVIOUR AND THE RISK OF HCV INFECTION

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Appealing to the promotion of safe sex to prevent HCV infection is sometimes questioned because of the established belief among physicians that the sexual transmission of these infections does not occur or occurs so rarely that it is not worth the deal. Many epidemiological studies remains in apparent accord with such conviction.

The most convincing results come from studies done on heterosexual couples, not infected with HIV, and not receiving drugs intravenously, remaining in permanent relationships for several years, of which only one person had anti-HCV anibodies. On the basis of meta-analysis of 80 publications Thome and Holmberg (1) conclude that „regarding heterosexual transmission, the weight of evidence is that there is no increased risk of sexual transmission of HCV among heterosexual couples in regular relationships".

Among studies of HCV infection risk in heterosexual relations especially convincing is the work Terrault et al (2), who studied a group of 500 serologically discordant couples with an average age of 49 years (26-79). The mean follow up was 15 years (2-52) which, assuming the infection of one of the partners before the start of follow-up, gave a cumulative time of observation 8,377 person-years. In this group, three infections were observed in which nucleotide sequence confirmed the compatibility of the virus genomes. This gives the sexual transmission of infection of 0.07 % per annum (95 % CI = 0,01-0,013) which, as the authors have estimated, represents one infection per 190 000 sexual contacts. Although these studies have not been able to determine the moment of infection of HCV positive partners, and counting from the beginning of the relationship may understmate the calculated probability, three cases of infection for several thousand person-years of cohabitation indicate a very low probability of infection.

Greater than specified above, the incidence of infection during heterosexual relations was described in the studies in which identification viruses using molecular techniques was not performed. This could lead to the inclusion of these infections, which occurred during the marriage in another way then sexual intercourse or came from other people than partners. The problem is the validity of the exclusion of stigmatizing risk behaviors based on interviews with individuals studied (3.4).

Terrault et al. in their research found no relationship between HCV infection and the type of sexual activity. This conclusion is not convincing. The material based on just three confirmed infections and reconstruction of memory regarding sexual behavior over several years and relating them to the infection, did not constitute sufficient grounds for such a statement. Especially in the light of well-documented case studies that confirm the possibility of infection in monogamous heterosexual relations in conditions of intensive contacts with the inclusion of anal sex, or immediately after removal of intrauterine dewvices (5.6). Also, the presence of HCV in the vaginal smears during the menstrual period or shortly after it indicates a potential of partner infection in this period (7).

The presence of HCV in the semen, was not consistently detected, which may be caused due to changes in viral load leading to, it's not continuous presence in semen, or use insufficiently sensitive tests (8.9). To understand the mechanism of HCV transmission during sexual intercourse may be helpful to compare it with the transmission of HIV (10). Both viruses are present in the semen in small amounts. However, the HIV virus encounters the dendritic cells in the tissue of the cervix and vagina that provide conditions of local replication of the virus. In contrast, the absence of target cells for HCV in the vaginal tissues, prevents HCV intrusion into the body through the vagina under conditions where the vaginal mucosa is not damaged. It is likely that only mucosal injury by disease states: herpes, syphilis or Trichomonas infection, as well as by the use of gadgets or brutal behavior, opens the way for access to tissue fluids or blood, potential site of virus intrusion (1.11).

In the cases of urethritis in men the passage of the HIV virus to semen from the surface of the inflamed epithelium may be enhanced. Then the concentration of virus in semen may greatly exceed the amount of which is present in the semen in a full health. It cannot be excluded that a similar mechanism applies to HCV.

An extensive literature reports that HCV transmission during sexual activity relates to homosexual contacts with persons infected with HIV. Also, many

studies indicate that anal sex between men with HIV (-) more often leads to HCV infection than at heterosexual intercourse, although the authors of the publications from Sweden and Switzerland based on the material from their countries have not confirmed that. It may result from a more strict observance in these countries of the sex with barrier protection against STI which may work also for HCV (12,13).

Physician or social worker engaged in the promotion of HCV prevention cannot ignore these potential factors that may increase the risk of HCV infection during sexual activity. Despite the fact that there is a very low probability of infection in people maintaining fidelity in stable relationships, it is important to highlight the conditions and situations that increase the risk of HCV infection in sexual contacts and explain how to reduce those risks. This information should be an important part of the training of trainers in health promotion. A list of these threats is long. In the event of the occurrence of sexually transmitted diseases, inflammation, and genital injuries likelihood of transfer of HCV to non-infected partner increases. Also important for the risk of HCV infection are the behaviors and habits of sexual partners such as their sexual activity outside the relationship and behavior not directly related to sexual relationship but often accompanying it. This include drug use, not just intravenous, but also methamphetamine and cocaine (14,15,16).

There are methodological difficulties in conducting research on risk factors for HCV transmission in situations associated with sexual activity. In many cases they are related to the retrospective nature of most studies, which is associated with memory bias, but also associated with low reliability interview data on the intimate details of sexual activity. Another problem make cultural and civilizational differences between different geographical regions, and within different groups of individual societies. Therefore external validity of the results of studies conducted in different countries is low. It is important to refer potential risk factors for HCV infection to the real situation or cultural background of the people addressed.

Even if the risk of HCV infection attributed to sexual activity depend on the presence of confounding factors which do not constitute the essence of sexual activity, but are related to concomitant psychosocial, consideration of these issues in the recommendations conditions of prevention is fully justified. A good illustration of the validity of this principle is the case of HCV infection in a monogamous heterosexual relationship (5). The patient described in this publication asked a doctor for advice about protection against HCV infection, since she entered a relationship with a man HCV positive. She was told that there is no such a need, without identifying conditions in which the risk of this infection may occur.

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