Research Highlights

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Human Papillomavirus and Chlamydia Infections Are Associated With Cervical Cancer

One of the major known causes of cervical cancer is human papillomavirus (HPV), also known as genital warts. HPV is a sexually transmitted disease, but little is known about why it persists in some women and not in others. The persistent form of HPV, which accounts for about 40% of cases, is most strongly associated with cancer. Routine condom use seems to protect against persistent HPV, but other factors for prevention are unknown.

Chlamydia trachomatis is a sexually transmitted disease that is fairly common but often asymptomatic, so diagnosis frequently is delayed. Women typically are diagnosed with chlamydia when they seek health care for other reasons. Unlike HPV, chlamydia usually can be treated with antibiotics.

Researchers in Sweden recently discovered that chlamydia trachomatis is associated with HPV persistence and cervical cancer. A group of 12,527 women participated in this population-based screening with 6,418 advancing to HPV DNA testing. These women were contacted again after about 19 months, and 303 who had been HPV positive previously were retested with the same method. Previous sexually transmitted diseases also were assessed by serology, and environmental exposures were assessed by an 87-item questionnaire. Forty-four percent of the women were positive for the same type of HPV as they had previously. Although condom use seemed to protect against persistent HPV, the most significant risk factor for persistence of HPV was a self-reported history of a previous chlamydia trachomatis infection.

Researchers now know that women with HPV and chlamydia are at high risk for cervical cancer and should be monitored closely. With more research, cervical cancer may be prevented or diagnosed early with improved outcomes.

Silins, I., Ryd, W., Strand, A., Wadell, G., Tornberg, S., Hansson, B.G., et al. (2005). Chlamydia trachomatis infection and persistence of human papillomavirus. *International Journal of Cancer, 116,* 110–115.

Mortality Increased for Gulf War Veterans Exposed to Destruction of Chemical Weapons

Chemical weapons are known to contain substances that cause health problems, many of which are not immediately evident. The goal of these weapons is to weaken the enemy by causing death or disease. Any soldier can be exposed to the weapons, but those involved in their destruction are at higher risk because of the release of chemicals. In March 1991, disposal units in the U.S. Army destroyed two large weapons in Khamisiyah, Iraq. In October 1991, March 1992, May 1992, and May 1998, representatives from the United Nations inspected Khamisiyah and detected the agents sarin and cyclosarin in the area. Sarin is a toxic nerve agent that can be absorbed by the skin, eyes, or mucous membranes. In large doses, it can cause seizures and death, but smaller doses result in fatigue, vision problems, and headaches. Sarin is not a known carcinogen. Protective equipment often is worn by soldiers, but the multitude of agents used in chemical weapons makes anticipated protection difficult.

American researchers investigated whether U.S. Army Gulf War veterans who potentially were exposed to nerve agents in Khamisiyah in 1991 were at increased risk for mortality. This was done by comparing 100,487 exposed veterans to 224,980 unexposed veterans, and 1,179 deaths for those exposed to 2,696 of those not exposed. This study was completed during a 10-year period with follow-up of veterans done in three increments. Cause-related mortality was classified into groups according to the *International Classification of Diseases* (ninth revision). For most disease-related mortality, the risks were similar between both groups. However, veterans who were exposed had an increased risk of death from brain cancer when compared to those not exposed. This risk was further increased if exposure occurred on two or more days compared to only one. The risk was the greatest at the third follow-up period or six to nine years postexposure. Other demographic data of the exposed group included a mean age of 27.7 years, Caucasian race (64%), and male gender. The investigators noted that additional research is required to validate these findings. Gulf War veterans from the 1990s should be followed closely for signs of brain cancer so that appropriate treatment can be initiated.

Bullman, T., Mahan, C., Kang, H., & Page, W. (2005). Mortality in US Army Gulf War veterans exposed to 1991 Khamisiyah chemical munitions destruction. *American Journal of Public Health, 95,* 1382–1388.

Bevacizumab Improves Survival in Advanced Non-Small Cell Lung Cancer

Researchers at the American Society of Clinical Oncology Annual Meeting in May 2005 in Orlando, FL, reported that the addition of bevacizumab (Avastin®, Genentech, Inc., South San Francisco, CA) to platinum-based chemotherapy (paclitaxel and carboplatin) significantly improved overall survival by 30% in a study of 434 subjects with untreated style IIIb or IV non-small cell lung cancer compared to 444 subjects who only received chemotherapy. After a follow-up of nine months, the subjects who received bevacizumab experienced significantly longer survival (12.5 months) than the subjects who received standard chemotherapy (10.2 months), a higher response rate (27% versus 10%), and longer time to cancer progression in (6.4 months versus 4.5 months). New and standard treatments were well tolerated. The most significant side effect was fatal bleeding, primarily from the lungs. This was infrequent but more common in patients who received bevacizumab (1%–2% versus none in standard therapy groups).

Institute Expands Effort to Revolutionize National Human Genome Research

The National Human Genome Research Institute, which is part of the National Institutes of Health, announced that it has awarded

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