

ARCHIVES OF INTERNAL MEDICINE

The Risk of Occupational Human Immunodeficiency Virus Infection in Health Care Workers: Italian Multicenter Study

Background: More than 50 cases of occupationally acquired human immunodeficiency virus (HIV) infection in health care workers (HCWs) have been reported worldwide. Determinants of injuries and of infection are important to investigate to design effective prevention programs.

Methods: In Italy, 29 acute-care public hospitals were enrolled in a multicenter study between 1986 and 1990. At each facility, all HCWs were enrolled who reported percutaneous, mucous-membrane, or nonintact-skin exposure to the body fluids and tissues to which universal precautions apply from an HIV-infected patient. Data were collected at the time of the incident on clinical status of the HIV-infected source, circumstance and type of exposure, and use of infection control precautions. The HCWs were followed up clinically and serologically for HIV infection at 1, 3, 6, and 12 months.

Results: A total of 1592 HIV exposures were reported in 1534 HCWs; most exposures (67%) occurred in nurses, followed by physicians and surgeons (17.5%). Needlesticks were the most common source of exposure (58.4%), followed by nonintact-skin and mucous-membrane contamination (22.7% and 11.2%, respectively) and cuts (7.7%). At the time of exposure, 77.5% of the HCWs knew or suspected that the source patient was HIV infected. Two seroconversions were observed among a total of 1488 HCWs followed up for at least 6 months: one occurred in a student nurse who had been stuck with a needle used for an HIV antibody-negative, p24 HIV antigen-positive drug addict; the other was in a nurse who experienced mucous-membrane contamination with a large quantity of blood from an HIV-positive hemophilic patient. The seroconversion rate was 0.10% after percutaneous exposure (1/1003; 95% confidence interval, 0.006% to 0.55%) and 0.63% after mucous-membrane contamination (1/158; 95% confidence interval, 0.018% to 3.47%).

Conclusions: The study demonstrates a small but real risk of HIV infection after percutaneous and mucous-membrane exposure to blood of HIV-infected patients and that transmission can occur during the "window period" of infection. Furthermore, exposures to HIV are not in-

frequent, and many exposures could be prevented with the use of barrier precautions, appropriate behaviors, and safer devices and techniques.

(1993;153:1451-1458) Giuseppe Ippolito, MD, et al, AIDS Unit RM10, L. Spallanzani Hospital, via Portuense 292, 00149 Rome, Italy.

Evaluation of a Portable Prothrombin Time Monitor for Home Use by Patients Who Require Long-term Oral Anticoagulant Therapy

Background: The anticoagulant activity of warfarin sodium is monitored by the prothrombin time (PT). The introduction of a portable PT monitor has raised the possibility that patients could reduce the inconvenience of anticoagulant therapy by measuring their PT at home. We performed this study to determine the feasibility and accuracy of home use of the portable PT monitor.

Methods: A prospective cohort study was performed in consecutive eligible patients who required long-term anticoagulant therapy. Patients performed multiple measurements of their PT at home by means of the portable monitor and at their usual laboratory within a 4-hour interval. The accuracy of the portable monitor was evaluated by two criteria for agreement. Standard agreement was achieved if the portable monitor and laboratory results were both either within or outside the patient's targeted therapeutic range or if the two results were within 0.4 international normalized ratio units of each other. Expanded agreement was achieved if both the portable monitor and laboratory results were within ± 0.4 international normalized ratio units of the targeted therapeutic range.

Results: Forty patients (19 men and 21 women, aged 25 to 74 years) were followed up for 6 to 24 months by means of the portable PT monitor. The mean level of agreement achieved per patient was 83% (95% confidence interval, 79% to 87%) by the standard criteria and 96% (95% confidence interval, 94% to 98%) by the expanded criteria. Twenty-seven patients (68%) and 39 patients (98%) achieved more than 80% agreement by the standard and the expanded criteria, respectively. Questionnaire results revealed that 97% of the patients preferred using the portable monitor to measure their PT.

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Conclusions: Patients receiving long-term anticoagulant therapy achieved a high rate of clinically important agreement between self-measurements of the PT with the use of a portable monitor and laboratory PT results. Patients strongly preferred using the portable monitor to measure their PT levels. The use of the portable monitor as the primary method for measuring the PT can be recommended in selected patients receiving long-term anticoagulant treatment.

(1993;153:1441-1447) David R. Anderson, MD, et al. Reprints not available.

Bleeding Complications in Oral Anticoagulant Therapy: An Analysis of Risk Factors

Background: Insufficient data are available about the safety of oral anticoagulant therapy. The specialized organization of thrombosis services in the Netherlands can provide important information on the bleeding risk and various risk factors for bleeding in patients receiving oral anticoagulant therapy.

Methods: In a follow-up study over a 12-month period beginning in January 1988 on all patients treated by the Leiden Thrombosis Service, the frequency of bleeding complications was assessed. A Poisson regression model was used to assess the relative contribution to the bleeding risk of age, sex, target zone (intensity of anticoagulant effect aimed at), achieved intensity of anticoagulant therapy (International Normalized Ratio), and the type of coumarin derivative used.

Results: Six thousand eight hundred fourteen patients experienced 1003 bleeding complications (16.5 per 100 treatment-years), 162 of which were major bleeds (2.7 per 100 treatment-years). Bleeding increased significantly with age (32% increase for all bleeding, 46% for major bleeding for every 10-year increase in age in comparison with age <40 years). Women had more minor bleeding complications than men, whereas both sexes experienced major bleeding in an equal frequency. There was no influence of target zone, while every one-point increase in International Normalized Ratio gave 42% more major bleeding (54% more regarding all bleeding). Use of acenocoumarol resulted in fewer bleeds (26% less regarding all bleeding and 46% less regarding major bleeding) than use of phenprocoumon.

Conclusions: The risk of anticoagulant therapy in a routine, real-life situation is similar as in the setting of several well-organized clinical trials. The risk of bleeding complications rises significantly with age and with the achieved intensity of anticoagulation, and is dependent on the type of coumarin derivative that is used.

(1993;153:1557-1562) Felix J. M. van der Meer, MD, et al, Hemostasis and Thrombosis Research Center, Department of Hematology, University Hospital Leiden, Building 1:C2-R, PO Box 9600, 2300 RC Leiden, the Netherlands.

ARCHIVES OF GENERAL PSYCHIATRY

Adult Outcome of Hyperactive Boys: Educational Achievement, Occupational Rank, and Psychiatric Status

Objective: The paucity of data concerning the long-term natural history of attention-deficit hyperactivity disorder (ADHD), a common childhood psychiatric disorder, prompted a longitudinal study to investigate the adult sequelae of the childhood disorder.

Design: Prospective study, follow-up intervals ranging from 13 to 19 years (mean, 16 years), with blind systematic clinical assessments.

Subjects: Ninety-one white males (mean age, 26 years), representing 88% of a cohort systematically diagnosed as hyperactive in childhood, and 95 (95%) of comparison cases of similar race, gender, age, whose teachers had voiced no complaints about their school behavior in childhood.

Results: Probands had significantly higher rates than comparisons of ADHD symptoms (11% vs 1%), antisocial personality disorders (18% vs 2%), and drug abuse disorders (16% vs 4%). Significant comorbidity occurred between antisocial and drug disorders. Educational and occupational achievements were significantly compromised in the probands. These disadvantages were independent of psychiatric status. We did not find increased rates of affective or anxiety disorders in the probands.

Conclusions: Childhood ADHD predicts specific adult psychiatric disorders, namely antisocial and drug abuse disorders. In the adolescent outcome of this cohort, we found that these disturbances were dependent on the continuation of ADHD symptoms. In contrast, in adulthood, antisocial and drug disorders appeared, in part, independent of sustained ADHD. In addition, regardless of psychiatric status, ADHD placed children at relative risk for educational and vocational disadvantage. The results do not support a relationship between childhood ADHD and adult mood or anxiety disorders.

(1993;50:565-576) Salvatore Mannuzza, PhD, et al, Department of Clinical Psychology, New York State Psychiatric Institute, 722 W 168th St, New York, NY 10032.

ARCHIVES OF SURGERY

Laparoscopic Inguinal Hernia Repair: A Preliminary Experience

Objective: To evaluate the safety and efficacy of laparoscopic inguinal hernia repair.

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Design: Nonrandomized trial.

Setting: Veterans Affairs hospital and a large university hospital.

Patients: The study included 38 patients (36 male and two female) who had an acceptable risk for general anesthesia, presented electively, and gave informed consent; patients were excluded for whom general anesthesia had a high risk or who had incarcerated or strangulated hernias.

Intervention: Laparoscopic inguinal hernia repair was performed with general anesthesia through bilateral, lower-abdominal, 12-mm lateral rectus sheath ports with an umbilical 30° viewing laparoscope. After the peritoneum was incised and flaps were raised, an onlay patch of polypropylene mesh, secured with staples, covered both indirect and direct hernia regions in each patient. Small hernia sacs were usually reduced or excised.

Results: From December 1991 through October 1992, 40 inguinal hernias were repaired; two patients had bilateral hernias. There were 22 indirect and 17 direct inguinal hernias and one femoral hernia. Nine of the hernias repaired were recurrent, and five were sliding hernias. Complications occurred in nine patients, but there were no recurrences during a median follow-up of 26 weeks. All but one patient resumed preoperative activities by 7 days after the operation.

Conclusions: Laparoscopic inguinal hernia repair is an effective operation with low morbidity. Long-term follow-up is needed to determine the durability of the repair.

(1993;128:781-786) David J. Winchester, MD, et al. Reprint requests to Raymond J. Joehl, MD, Surgical Service (112), VA Lakeside Medical Center, 333 E Huron St, Chicago, IL 60611.

ARCHIVES OF NEUROLOGY

Antiplatelet Therapy Is Effective in Primary Prevention of Myocardial Infarction in Patients With a Previous Cerebrovascular Ischemic Event

Objective: A secondary subgroup analysis of the European Stroke Prevention Study of the effect of antiplatelet medication on the risk of myocardial infarction.

Design and Setting: A randomized, double-blind, placebo-controlled study with two parallel treatment groups (dipyridamole plus aspirin and placebo). Sixteen centers from six countries participated in the study.

Patients: A total of 2500 patients who had had one or more transient ischemic attacks or cerebral infarctions participated.

Intervention: Combination therapy with dipyridamole (75 mg three times a day) and aspirin (330 mg three times a day) was compared with placebo during 24 months' follow-up.

Outcome Measures: Prevention of fatal and nonfatal myocardial infarction.

Results: A total of 105 myocardial infarctions occurred

in the intention-to-treat analysis and 76 occurred in the explanatory analysis. The overall risk reduction of myocardial infarction with the study drugs was approximately 40% in both statistical analyses, but the result was statistically significant only in the intention-to-treat analysis. Therapeutic efficacy was better among male patients, patients younger than 65 years, and patients with hypertension.

Conclusion: Combination therapy with dipyridamole and aspirin reduces not only the risk of cerebrovascular ischemic events but also the risk of myocardial infarction.

(1993;50:710-713) Juhani Sivenius, MD, PhD, et al, Department of Neurology, University Central Hospital, 70210 Kuopio, Finland.

Silent Brain Infarction and Coronary Artery Disease in Japanese Patients

Objective: Silent brain infarction is fairly common in the elderly, but predictive factors have not been definitively established. This study focuses attention on ischemic heart disease and cerebrovascular risk factors about the frequency of silent brain infarction.

Design: The existence of silent brain infarction, the extent of coronary artery stenosis, and cerebrovascular risk factors of consecutive 92 case series with suspected ischemic heart disease were surveyed.

Settings: A hospital for patients with ischemic heart disease.

Patients: Ninety-two consecutive Japanese patients with suspected ischemic heart disease were recruited.

Main Outcome Measures: All subjects were evaluated for coronary atherosclerosis (number of coronary arteries with significant stenosis and Gensini score), the number of silent brain infarctions detected by computed tomography, the extent of carotid atherosclerosis as determined by B-mode ultrasonography, and cerebrovascular risk factors.

Results: Patients with silent cerebral infarctions were older (66.2 ± 10.4 years) than those without such events (60.1 ± 8.8 years) ($P < .01$). The extent of coronary atherosclerosis in patients with silent cerebral infarctions was significantly greater than in those without such events after adjustment for the effect of age ($P < .001$). The extent of carotid atherosclerosis and the percentages of individuals with hypertension, diabetes mellitus, a smoking habit, hypercholesterolemia, hypertriglyceridemia, and a low serum high-density lipoprotein cholesterol level did not differ between the groups with and without silent brain infarction. The frequency of silent brain infarction increased with the severity of coronary stenosis.

Conclusion: Coronary atherosclerosis and age were important risk factors for silent brain infarction.

(1993;50:706-709) Hidekazu Tanaka, MD, First Department of Internal Medicine, Osaka University School of Medicine, 2-2 Yamadaoka, Suita, Osaka 565, Japan.