Detection of High Risk Human Papillomaviruses in Esophageal Squamous Cell Carcinoma by PCR and DNA Sequencing

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ABSTRACT

Background and objectives: Human papillomavirus (HPV) is one of the possible etiologic factors in development of esophageal squamous cell carcinoma (ESCC) especially in high risk areas. We aimed to study the frequency of high risk HPVs in ESCC.

Material and methods: 140 cases of ESCC were analyzed for the HPV DNA by Polymerase chain reaction (PCR) using GP5+/GP6+ primers to amplify a 150-bp segment of HPV genome. HPV positive samples were subsequently sequenced to identify the type of HPV.

Results: From 140 patients with ESCC enrolled to our study, 50.7% were female and 49.3% were male, aged between 20 to 81 years old. Half of them were between 60-70 years. 23.6% of tumoral regions and 8.6% of non-involved tumor margins were HPV positive. The HPV positive cases were 21.7% male and 25.3 % female. From HPV positive tumor cases 36% were also positive in non-involved tumor margins. The frequency of HPV subtypes in tumoral regions were as follow: HPV-16:60.6%, HPV-18: 30.3%, HPV-33: 6.1% and HPV-31: 3 %. We found only HPV-16 in tumor margins. There is no correlation between presence and types of HPV with patients' sex and age.

Conclusion: Our results confirm the previously reported HPV involvement in the esophageal squamous cell carcinoma in high-risk areas. HPV-16 and 18 were the most prevalent types of HPV among the esophageal cancer cases.

Key words: ***Human papillomavirus (HPV), esophageal squamous cell carcinoma (ESSC), polymerase chain reaction (PCR)***

Survey of Different Enrichment Methods, Prevalence and Antibiotic Resistance of E.coli O157:H7 in Raw Milk of Jahrom Cows

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ABSTRACT

Background and objective: E.coli serotype O157:H7 is one of the major food borne disease. Animal sources, especially cow's milk, are one of the original sources infection transfer to human. The purpose of this study is to survey the prevalence and compare different enrichment methods and investigate antibiotic susceptibility of isolates strain of this bacteria from raw milk on Jahrom cows.

Material and methods: In this study, 500 specimens of cows milk from three original areas in Jahrom in 1384 is collected and after enrichment in three culture media: ECB, TSB & BHI containing novobiocin in three different temperature: 22, 37, 45 degree centigrade have been evaluated. Then for evaluating lactose and sorbitol fermentation the CT-SMAC, VRBA and ECC medias and for assessment of ß-glucoronidase activity of isolate bacteria specific chromogen media has been used. Finally with the use of specific antisera the isolation of E.coli O157:H7 confirmed and with standard method susceptibility to 17 different antibiotics tested.

Results: The used of TBS culture media in 22^{o}C (with 53.60% frequency) diagnosed as the best method for enrichment. Out of specimens, that have been supplied from 45 specimens, sorbitol negative E.coli (9%). After confirmed tests, the rate of *MUG* negative E.coli were detected 3.60 and E.coli O157:H7 isolation were detected 3.40%, that all of them were resistance to Penicillin, Ampicillin and Novobiocin.

Conclusions: For reason of pathogenesis and low infection dose (100 to 200 organisms) of E.coliO157:H7, the further studies on other diary products in Iran recommended.

Key words: ***Cow's Milk, E.coliO157:H7, Enrichment Methods, Antibiotic resistance.***

Frequency of Hepatitis E Antibody Among Blood Donors in Hamadan

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ABSTRACT

Background and Objective: Hepatitis E virus is the most common cause of acute adult hepatitis in Asia after hepatitis B, and it is the second cause of it, in North Africa and in the Middle East. Hepatitis E virus infection spreads by the fecal-oral route and the transmission with contaminated water is more than with contaminated food. However, vertical, parentral(especially in endemic region) and sexually transmission are probable. Recently, transmission by blood transfusion has been diagnosed. Therefore, this study was done with the objective of determining the frequency of Hepatitis E antibody among blood donors, in Hamadan blood transfusion center,

Materials and methods: This was a cross-sectional descriptive study, which was done on 280 blood donors, in Hamadan blood transfusion center. Blood donated were evaluated for hepatitis B, hepatitis C, HIV, and syphilis in blood transfusion center. 3cc of blood were sent to laboratory at the temperature of -4^{o}c and were evaluated for the presence of hepatitis E antibody by ELISA method (by diapro kit, manufactured by Italy). Data such as age, sex, occupation, education, location, water states, positive familial or personal history of icter, addiction, surgery, hospitalization, blood transfusion and vaccination history against hepatitis B, were collected via questionnaires.

Results: From 280 donors, 249 patients (88.9%) were men and 31 patients (11.1%) were women. Hepatitis E antibody (Anti HEV-IgG) was detected in 36 persons (12.9%), and 7 persons (2.5%) had acute hepatitis E(Anti- HEV IgM). 205 persons were under 40 years. 31 of them (15.1%) were positive for anti- HEV IgG and 75 persons had 40 years old or more that 5 persons of them(6.7%) were positive for anti-HEV IgG which this differences was statistically significant($P<0.05$). Male to female ratio for anti-HEV IgG presence was 0.6. The differences of education levels, occupation, the source of water, familial history of icter, history of hospitalization and blood transfusion, were not significant in positive and negative anti-HEV IgG($P>0.05$). Whereas, the frequency of anti-HEV IgG positive persons in rural societies was more than urban societies ($P<0.05$).

Conclusion: Regarding to, the serologic prevalence rate of hepatitis E among blood donors in Hamadan as 12.9% and, the results of other studies done in Tabriz and Nahavand, Iran is probably endemic for this infection.

Key Words: ***Hepatitis E, Hepatitis E Virus (HEV), Blood Donors.***

Evaluation of immunogenicity of transgenic Leishmania major in BALB/c mice

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ABSTRACT

Background and objective: Since once infection with Leishmania gives raise permanent immunity. The development of an affordable vaccine is considered the only cost-effective means to control leishmaniasis.

Material and methods: In present study transgenic strain of L.major which express two suicide genes; thymidine kinase gene of Herpes Simplex Virus type one (HSV-tk) and cytosine deaminase gene of Saccharomyces cervisiea (Sc-cd) in its genome have been used for vaccination of mice. Susceptible BALB/c mice were infected by transgenic L.major and treated for 2 consecutive weeks with ganciclovir and 5-fluorocytosine both drug together, after one week at the initial infection.

Results: Treatment with these drugs at varying groups after infection showed different effects on the outcome of disease. The goal of this study was, assaying the immunogenesity obtain by vaccination of mice with transgenic L.major. Start of drug administration on day 7 after initial infection showed eradicating of parasites in BALB/c mice. Challenge with wild type L.major in vaccinated and no vaccinated mice showed different results. After challenge in vaccinated BALB/c mice, it was attenuated and delayed disease progression, which was due partial immunity. The ELISA cytokine assay in this group showed high increase of IFN-□ and low IL-4 in compare with control mice (no vaccinated mice).

Conculosion: This result confirms high level of immunity against Leishmaniasis in vaccinated BALB/c mice with transgenic L.major. The inducible expression of suicide gene products represents a valuable tool for the development of safe and effective vaccines.

Keywords*: Leishmania major, transgenic, vaccine*

Antibiogram Pattern of Gram Negative Bacillus and S. *aureus in Kermanshah.*

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ABSTRACT

Background and objective: Antimicrobial resistance is one of the main health problems, which its major cause is the illogical use of antibiotics due to loss of epidemiologic and microbiologic information. This study carried out for invitro susceptibility evaluation of gram-negative bacilli and staphylococcus aureus to cefepime as a forth- generation cephalosporin and other broad spectrom antibiotics. The major goal is sientifical assessment of antimicrobioal resistance patherns in our center and makes a base for planning academic strategies in use of this drug.

Materials and methods: This cross-sectional study carried out in Emam-Khomaini hospital of Kermanshah, 2004 clinical specimens were placed in standard culture medium. 500 isolates of Pseudomunas aeroginosa(n=66), Klebsiella(n=179) , Ecoli(n=179) and staphylococcus aureus(n=179) were identified using conventional methods. In vitro susceptibility was assessed using disk-diffusion method.

Results: Susceptibility of isolates to cefepime was statistically different (P<0.0001). The most susceptible organism was Ecshrishia coli and the least susceptible organism was pseudomonas aeroginosa with 68.8% and 3% susceptibility rate respectively. The most effective antibiotic against pseudomonas aeroginosa, klebsiella, Echrishia coli and staphylococcus aureus was imipenem with 28.8%, 95.5%, 99.4% and 90.8% susceptibility, respectively. Ceftriaxone was the least active agent against pseudomonas aeroginosa and Ecoli by 67.6% and 1.5% susceptibility, respectively.The least active agent against klebsiella was cefepime with 19% susceptibility, and against staphylococcus aureus was ceftazidime with 50% susceptibility. The most resistance to investigated antimicrobials was in burn ward (75.55%) and ICU (54.92%).The least resistance was found in general ward (10.9%) and infectious ward (24.76%).

Conclusion: Our results reflect the low potency of cefepime against gram-negative bacilli and staphylococcus aureus.This results have specific difference with studies carried out in other countries that can be outcome of illogical use of cephalosporins. Specially third-generations that have resistance mechanisms similar to cefepime, in our center.
Susceptibility to other broad-spectrum antibiotics was very low. Partially suitable effectiveness of imipenem is comparison with other drugs may be due to limited use of this drug and its different resistance mechanisms.The alarming rats of resistance found in this study provide compelling evidence of the need for more rational use of antimicrobial agents in our country.

Key words*: Gram-negative bacilli, staphylococcus oureus, Cefepime, Kermanshah.*

Seroprevalence study of anti-cytomegalovirus antibodies in individuals infected with HIV virus in Qom regional blood transfusion center

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ABSTRACT

Background and Objectives: Cytomegalovirus (CMV) is one the most prevalent opportunist infections agents in patients with HIV/AIDS which caused to making various syndromes such as chorioretinitis, encephalitis, Pneumonia and gastroenteritis in patients with AIDS. This virus is of herpesviruses family and can be seen in all fluids of infected individuals. Infection with cytomegalovirus has a worldwide spreading, as if the rate of infection is variant from 45% in developed countries to 100% in developing countries.
The main purpose of this study is determination of seroprevalence of anti-CMV antibodies (IgG and IgM) in individuals infected with HIV virus, and its last purpose is prevention of Cytomegalovirus infection in HIV-positive individuals and promotion of level of healthcare.

Materials and methods: In this Cross-sectional study 75 serum samples from individuals infected with HIV virus (Including 48 serum samples which is sent to Quality Control laboratory of Qom regional blood transfusion center, 24 serum samples from prisoners of scout plan and 3 serum samples from donors) from tir 1382 until khordad 1383 were examined after confirming existence of anti-HIV by using Western blot method, from the viewpoint of anti-CMV antibodies (IgG and IgM) by ELISA method using diagnostic kit CMV-IgG and CMV-IgM made in Equipar company in Italy. Personal Identifications of 75 individuals infected with HIV virus such as sex, age, marriage status, level of education, record of addiction and record of prison collected from existing files in consultation center of AIDS in Qom Health Center after carrying out related tests, and then were considerated and analyzed statistically.

Results: Among 75 serum samples which were examined by IgG-ELISA method, 53 people (70.66%) had special antibody IgG (more than 0.5 u/ml) and all of the serum samples were negative from the viewpoint of existing anti-CMV antibody IgM by using IgM-ELISA method. All of 53 people whose IgG-ELISA test were positive, were male and 41 people (77.35%) were 20-35 years old and 12 people (22.65%) were 36-50 years old. Among 53 people, 27 people (50.49%) were single and 26 people (49.06%) were married. From the viewpoint of level of education, 4 people (7.54%) were illiterate people, 36 people (67.93%) had elementary education and guidance education and 13 people (24.53%) had secondary education. 33 people (62.26%) among 53 people, who had anti-CMV special antibody, had record of injectional addiction, and 27 people (50.49%) had record of prison.

Conclusions: The results indicate that 70.66% (53 people) individuals infected with HIV virus, who were examined in this research, have anti-CMV antibody IgG. Since infection with this virus can dangerous and deathful diseases in patients with AIDS, so, chymoprophylaxis with Ganciclovir should be done in individuals who infected with HIV virus who have special antibody against cytomegalovirus and their $CD4^+$ cells count is less than 50.

Key words: ***Seroprevalence, Cytomegalovirus infection, HIV Virus, Qom***

Evaluation of the ELISA- IgG for the diagnosis of Acute Human Brucellosis

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ABSTRACT

Background and objective: Brucellosis is an important public health problem that occurs worldwide. Its clinical manifestations can be quite varied and definitive signs to indicate the diagnosis can be lacking and the clinical diagnosis must usually supported by the results of bacteriologic and / or serologic tests. According to recent reports in Iran our city "Hamedan" is a one of the cities with high incidence of brucellosis (incidence=107.5/100000 per year).

Materials & methods: In this diagnostic study, patients with clinical diagnosis of brucellosis that had referred to Sina hospital were evaluated. A combination of infection diseases specialist clinical diagnosis and positive Wright test (Wright test ≥ 1/80) or positive 2ME test (2me ≥ 1/40) defined as a gold standard for diagnosis of brucellosis. Control's group was medical students and some of their families that have negative Wright and 2me tests and clinical diagnosis of brucellosis.

Results: Over a one-year period, we had 200 patients (120 male and 80 female) with clinical features suggestive of brucellosis and 200 medical students and some of their families as a control group. The average age in patients was 38.74 years (min=6, max=76, SD=17.3) and in control group was 33.38 years (min=6, max=70, SD=14.5). All the 200 controls had a negative Wright and 2ME test results. The sensitivity and specificity of the ELISA were 92% and 100% respectively. The positive and negative predictive values were 100% and 92.5% respectively.

Conclusion: The ELISA is a rapid, reliable, easy to perform and sensitive test in the diagnosis of brucellosis. It saves laboratory cost and time.

Keywords: ***Brucellosis/Diagnostic tests, Routine/Enzyme-linked immunosorbent assay***

Determination of fungal colonization among burn patients reffered to Taleghani hospital, Ahwaz

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ABSTRACT

Background and objectives: Secondary infection is one of the main complexities in burn patients. The broad-spectrum use of antibiotics, immunosuppressant, malnutrition, several debridmans and surgeries are the main predisposing factors for fungal infection. The aim of this study was to determine the colonization of saprophytic fungi among burn wound in burn patients of Taleghani hospital.

Material and methods: A prospective study carried out on 411 burn patients who were referred to Ahwaz Taleghani hospital. Direct smear were investigated using 10% KOH, in addition smear stained with methylen blue was also performed. All of the samples were cultured on sabourud dextrose agar. Identification of fungi confirmed by using macroscopy and microscopy investigation and appropriate complementary tests.

Results: 36 patient samples were positive for fungal elements with either direct examination and culture. Fungal agents isolated from samples included *Aspergillus fumigatus, Candida albicans, Rhizopus, penicillum* and *Alternaria. A. fumigatus* and *C.albicans*, with 27.7% and 47.2% respectively, were the most predominant isolated fungal agents. There was no significant difference regarding fungal colonization with age, gender, hospital departments and burn degree.

Conclusion: Our results were similar to the previous studies. No correlation between patient's fungal colonization and investigated variables, such as age, gender, hospital departments and burn degree, may be as results of affording the same quality hospitalization of patients at hospital. Due to the risk of dissemination of fungal colonization and septicemia and other unexpected prognosis, special care of the patients should be pointed consistently. Furthermore, risk of fungal infection in burn patients should be emphasized and health care personal should be notificated. Continuous epidemiological and laboratory investigation for confirmation of fungal colonization and taking special prevention skills, are necessary for adequate treatment.

Key words: ***burn lesion, fungal infection, saprophytic fungi.***

Prevalence of Pulmonary Tuberculosis among patients with Anthracofibrosis in Zahedan

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ABSTRACT

Background and objective: Anthracosis refers to the presence of carbon particles in the lungs, not to a disorder per se. Anthracosis is seen particularly in those who smoke or live in a city or industrial environment. Bronchial anthracofibrosis has recently been defined as a luminal narrowing associated with anthracotic pigmentation on bronchoscopy. Recent studies have determined that it is a potent risk factor for tuberculosis. This study was conducted in order to determine the prevalence of pulmonary tuberculosis among patients with anthracofibrosis in Zahedan.

Materials and methods: In this cross –sectional,descriptive study, we evaluated all patients who were referred to Boo-ali hospital,Zahedan (Sistan and Baluchistan Province) in a time period of 3 years from 2002 to 2005 because of chronic pulmonary disease. After the primary sputum smear for Acid-fast bacilli was negative, all of these patients went under broncoscopic examination. When anthracotic pigmentation in the overlying mucosa on bronchoscopy was seen, we examined more sputum smear for Acid-fast bacilli. Tuberculosis was defined based on positive sputum smear or sputum culture, positive smear and culture of bronchial washing fluid, pathology and PCR.

Results: Out of 211 patients who went under bronchoscopy, 49 cases(23.2%) had anthracofibrosis(25 male, 24 Female).Among patients with anthracofibrosis75/5% had pulmonary tuberculosis(18Male,20Female) .Ninety-six percent of anthracofibrotic patients wee smoker .Seventy –six percent of women with anthracofibrosis were bread cookers.

Conclusion: As a conclusion, pulmonary tuberculosis may be closely related to the development of bronchial anthracofibrosis. Therefore, in the endemic areas, when a patient has a history of chronic cough or chronic pulmonary disease and anthracofibrosis has been shown by bronchoscopy , the physicians must have Pulmonary tuberculosis in mind too.

Key words: ***Prevalence, Zahedan, Anthracofibrosis, Tuberculosis***

Epidemiologic Study of Pulmonary Tuberculosis in Kurdistan Province from 2000 until 2001

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ABSTRACT

Background and objective: In spite of successful Management in prevention and control of Infection diseases in world, especially developed Countries TB is still a serious problem of public health. This survey includes epidemiologic Study of pulmonary the cases in Kurdistan province from 2000 until 2001.

Material and methods: In this survey all of the defined pulmonary tuberculosis from 2000 until 2001 in Kurdistan province. Data were gathered from district tuberculosis center and registration book in there and from hospital records and Health center records and so gathering data from patients.

Results: In this survey 387 person were investigated. 234 (60.5%) were female and 153 (34.5%) were male. 225(58.1%) were urban and 162(41.5%) were rural. The mean age for men was 54/84 (±14.81) and for women 44/98 (±20.27) (P0.001). 225 (58.1%) cases were positive smear and 162 (41.9%) were negative smear. Incidence rate for smear positive was 7.3 per 100000 and proportion of new case detection rate was %29, cure rate was %92 and dead rate was %6.2 and treatment failure was 3.5%.

Conclusion: High incidence TB in women compared with men was observed only on few countries in EMRO, are Afghanistan, Pakistan and Iran. In other countries incidence in men is higher then women incidence rate in urban area is more the rural area and maybe case finding not appropriate.

Key Words: ***Tuberculosis, Epidemiology, Smear positive, Incidence Rate.***