The effectiveness of group therapy based on emotional regulation on cognitive and emotional problems and cognitive helplessness in patients who have recovered from COVID-19 with Remdesivir treatment

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Abstract

Introduction: Diseases caused by infection in the immune system can result to psychological disorders. The perevalance of the acute respiratory syndrome coronavirus (COVID-19) has been associated with psychiatric consequences. The aim of this study is to investigate the effectiveness of treatment based on emotional regulation on problems. Cognitive and emotional (memory, mood) and cognitive helplessness (stress, depression, anxiety) in patients who recovered from Covid-19 with Remdesivir treatment in Rafsanjan city.

Methods: A semi-experimental research design with a pre-test-post-test design with a control group, the statistical population includes patients with covid-19 in the city of Rafsanjan in 1400 who were treated with Remdesivir. The study sample includes 30 recovered patients who were randomly selected to participate in the study based on their desire and satisfaction and were replaced in two experimental and control groups. Treatment based on emotional regulation was performed in 8 sessions of 1:30 for the experimental group and the control group did not receive any psychological treatment. Both groups answered the depression, anxiety and stress scale (DASS) (1992), the Mood and Feeling Questionnaire (MFQ) (1987) and the memory capacity questionnaire before and after the training process. The data collected on They were analyzed based on SPSS-21 software with descriptive and inferential statistics

Findings: The results of the research showed that the treatment based on emotional regulation has a significant effect on improving memory function and mood, as well as depression and anxiety in recovered patients with COVID-19. Treatment based on emotion and stress did not have a significant effect on the recovered patients (P>0.05).

Conclusion: Considering the alarming effect of COVID-19 infection on mental health, it is recommended and emphasized to evaluate the psychopathology of the survivors of COVID-19 in order to diagnose and treatment psychological disorders and problems.

Keywords: Treatment of emotion regulation, COVID-19, cognitive disability, memory, mood

A report of cutaneous anthrax in two ranchers in Varamin city, Tehran province

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Abstract

Background and purpose: Anthrax caused by *Bacillus anthracis* is a zoonotic disease among humans, domestic and wild animals, and human infection occurs after contact with infected animals or products of infected animals. In humans, the disease may occur in three forms: cutaneous, gastrointestinal and inhalation. The aim of the present study is to describe cases of human anthrax in order to emphasize the need to raise the level of awareness of livestock farmers and to ensure compliance with safety principles when dealing with sick livestock.
Materials and methods: In a flock with 510 sheep in Varamin region, 5 of them died acutely and subacutely. In this flock, two shepherds developed two wounds with a black center on the forearm and finger. After sampling from the wounds, infection with the anthrax bacterium was investigated using Giemsa staining and PCR method.
Findings: None of the dead and slaughtered animals showed signs of bleeding from the natural pores of the body. In Giemsa staining, bacilli surrounded by a reddish capsule were observed, which confirmed the infection with *Bacillus anthracis* by the molecular test.
Conclusions and suggestions: Considering that currently, anthrax vaccination is done only in high-risk areas, it is necessary for sheep farmers to be aware of the importance of anthrax and its similarity to the very common disease of enterotoxemia through effective training.

Keywords: Anthrax, Cutaneous anthrax, Enterotoxemia, Sheep, Goat, Zoonotic disease,

Risk of Coxiella burnetii transmission from goat to human during kidding season

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Abstract

Background and purpose: The causative agent of Q fever in human is *Coxiella burnetii*, a gram-negative bacterium that has been reported in most parts of the world. The bacterium is capable of infecting a wide range of host species and causes an important zoonotic disease. The purpose of the present study is to investigate the infection of parturition discharges and bedding of Saanen and Alpine goats during the breeding season, which will give attention to the environment in the transmission of the agent to humans.
Materials and methods: In a flock including Saanen and Alpine goats, twice a week for a period of three months, a sample was prepared from the bedding and parturition discharges on the bed using a sterile swab. Then, using PCR method, the presence of *Coxiella burnetii* was investigated.
Findings: All the 24 samples were positive for *Coxiella burnetii* in PCR test. During the study period, the births of the goats were normal and no case of abortion or stillbirth was observed.
Conclusions and suggestions: Considering the of Q fever infection in human, especially its chronic form and the lack of vaccination in both animals and human in Iran, it is necessary to pay attention to sanitary measures to prevent the disease. The most important way to prevent the transmission of *Coxiella* from animals to humans is to reduce the load of environmental pollution, which, along with educating people at risk and appropriate management of small ruminant, can be effective in preventing human infection.

Key words: Alpine, Coxiella burnetii, Saanen, Q fever, Zoonotic disease.

Evaluation of the frequency of *rmtB* and *aac (6')Ib* genes in strains resistant to gentamicin and amikacin in *Klebsiella pneumoniae* bacteria isolated from clinical samples ,Tabriz

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Abstract

Backgrounds and objectives: The increase in antibiotic resistance of bacteria to aminoglycosides, especially *Klebsiella pneumoniae*, in recent years has caused concern among scientists and the World Health Organization. The aim of this study is to evaluate the *rmtB* and *aac (6')Ib* genes in clinical isolates resistant to gentamicin and amikacin antibiotics in *Klebsiella pneumonia* .

Method: The current study is a descriptive-cross-sectional type, which includes 550 clinical samples from different wards of Alinasab Hospital in Tabriz. Identity of all isolates was reconfirmed using standard laboratory methods.The antibiotic resistance test for amikacin and gentamicin performed with using disc diffusion method based on CLSI standards. Also,The frequency of *rmtB* and *aac (6') Ib* genes was evaluated using the polymerase chain reaction.

Results: In this study, 100 strains of *Klebsiella pneumoniae* were isolated from 550 clinical samples, 52% of which were women and 48% were men. The highest rate of resistance to gentamicin was observed with 34% and the highest sensitivity to amikacin was observed with 78%. Meanwhile, in the molecular results of polymerase chain reaction, 27.77% of isolates had *rmtB* gene and 16.66% had *aac (6') Ib* gene.

Conclusion: The results of the present study demonstrated that the increase of antibiotic resistance is a serious threat for human health. For this reason, in order to prevent the increasing prevalence of this risk, it is logical to optimize the use of antibiotics and culture in the society.

Keywords: *Klebsiella pneumoniae*, *rmtB* and *aac (6') Ib* genes, aminoglycoside antibiotics, drug resistance, Tabriz

Frequency of biofilm production among methicillin resistant *Staphylococcus aureus* strains isolated from patients with urinary tract infection in Tehran during 2020-2022

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Abstract

Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is an emerging cause of community- and hospital- associated urinary tract infections (UTIs), and known as one of the main pathogens causing chronic infections, mainly due to its capacity to form biofilms. The aim of this study was to determine the frequency of biofilm formation among MRSA strains isolated from patients with UTI in Tehran.
Materials and Methods: During 2020-2022, a total of 519 suspected *S. aureus* isolated from patients with UTI were collected from a hospital laboratory in Tehran, and confirmed using PCR by specific primers for *nuc*A gene. A combination of agar screening (supplemented with oxacillin), disk diffusion method using cefoxitin disk (30 μg/ml) and specific primers for *mec*A and *mec*C genes were employed for determination of resistance to methicillin. The ability of MRSA strains to produce biofilm was tested using qualitative Congo red agar (CRA) and quantitative microtiter plate (MTP) assays. Prophage typing and SCC*mec* typing methods were employed using separate multiplex-PCR assays to type the MRSA strains.
Results: Totally 92% of strains were confirmed as *S. aureus* in which 134 strains (28%) which showed resistance to cefoxitin and harbored *mec*A gene were selected as MRSA. Using combination of qualitative CRA test, 55 strains (41%) were slime positive in which 78% of strains were able to form biofilm. Thirteen percent of strains harbored SCC*mec* types IVa and V and confirmed as community acquired MRSA (CA-MRSA). Also, 4 prophage patterns and 5 prophage types were identified among strains, in which prophage type SGF and its two subtypes (SGFa and SGFb) were the most prevalent types. Moreover, prophage pattern 3 (consisting of SGB, SGF, SGFa and SGFb prophage types) were the dominant ones. All CA-MRSA strains were positive for SGA and SGL prophage types.
Conclusion: The results of the present study revealed the high frequency of biofilm formation among MRSA strains with different prophage types among patients with UTI in Tehran. The potential ability to produce a wide range of virulence factors, biofilm formation and high rate of antibiotic resistance results in emergence of highly pathogenic bacteria; which indicating the importance of more expansion healthcare monitoring and infection control in the hospitals.

Key words: UTI, MRSA, biofilm, prophage type, SCC*mec* type