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Сала 2
СЕСИЈА В: Медицинска бактериологија
SESSION V: Medical Bacteriology
15.00 h. - 18.00 h.
Председателство: Трајковска-Докиќ Е., Талески В., Цековска Ж.
Chairpersons: Trajkovska-Dokic E., Taleski V., Cekovska Z.

15.00-15.15	**B.1** **ANTIBACTERIAL RESISTANCE OF *STREPTOCOCCUS PNEUMONIAE* ISOLATED FROM CHILDREN AT UNIVERSITY CLINICS IN SKOPJE** ***Kotevska V.**, Jankoska G, Kaftandzieva A,Cekovska Z., Petrovska M, Panovski N* Institute of Microbiology and Parasitology, Medical Faculty, Skopje, Macedonia
15.15-15.30	**B.2** **FREQUENCY OF PSEUDOMONAS AERUGINOSA IN PATIENTS WITH CYSTIC FIBROSIS** ***Jakovska-Maretti M.**, Fustik S., Spirevska L.* University Pediatric Clinic, Skopje, Macedonia
15.30-15.45	**B.3** **SEROGROUPING AND RAPD-PCR OF *CAMPYLOBACTER JEJUNI*** ***Trajkovska-Dokic E.**[1], Grozdanovska A.[2], Grdanoska T.[1], Stojkovska S.[3], Petrov J.[1], Icev K.[1]* [1]Institute of Microbiology and parasitology, Medical faculty, "St Cyril and Methodius" University Skopje; [2]Faculty of Pharmacy, "St Cyril and Methodius" University, Skopje; [3]Clinic for Infective Diseases, University Clinical Center, Skopje, Macedonia
15.45-16.00	**B.4** **GENOTYPIC CHARACTERISTICS OF *STAPHYLOCOCCUS AUREUS* ISOLATES IN UNIVERSITY CLINICS IN SKOPJE** ***Cekovska Z**[1], Kaftandzieva A[1], Petrovska M[1], Labacevska L[1], Panovski N[1] Guidan A[2], Rozgonyi F.[2]* Institute of microbiology and parasitology[1] Medical faculty, Skopje, Macedonia Institute of Medical Microbiology "Semmelweis University Medical School"[2], Budapest, Hungary
16.00-16.15	**B.5** **"PCR BASED METHODS FOR DIAGNOSIS OF HUMAN BRUCELLOSIS"** ***Taleski V.*** Institute of Preventive Medicine, Military hospital, Skopje, Macedonia
16.15-16.45	**ПАУЗА**
16.45-17.00	**B.6** **ENTEROCOCCI AS AN IMPORTANT CAUSE OF HUMAN INFECTIONS - VIRULENCE AND RESISTANCE** ***Jankoska G.**, Petrovska M., Trajkovska-Dokic E., Popovska-Jovanovska K., Curcic-Trajkovska B., Hadzi-Petruseva Meloska I., Panovski N.* Institute of Microbiology and Parasitology, Medical Faculty, UKIM, Skopje, Macedonia
17.00-17.15	**B.7** **EVALUATION OF THE BACTERIAL ADHERENCE ON THE INDWELLING TRANSURETHRAL CATHETERS "IN VITRO"** ***Markov J.**[1], Petrovska M.[2]* [1]"Mikrolab" Skopje, Skopje, Macedonia, [2]Institute of Microbiology and Parasitology, Medical Faculty, Skopje, Macedonia
17.15-17.30	**B.8** **МАКЕДОНСКИОТ ПРАВОПИС ВО МИКРОБИОЛОШКАТА ТЕРМИНОЛОГИЈА** ***Пановски Н.**[1], Пановска-Димкова И.[2]* [1]Институт за микробиологија, Медицински факултет; [2]Катедра за македонски јазик, Филолошки факултет „Блаже Конески"; Универзитет „Св.Кирил и Методиј" – Скопје, Р. Македонија

ing to PFGE classes, MRSA strains entirely belonged to the second class – probably genetically connected, whereas the 12 MSSA strains were classified in the third and fourth class (probably connected or not connected). Thus, we have confirmed the observations found in the literature that there was a greater heterogenicity of genome of MSSA strains than that of MRSA isolates. Analyzing separately the most present subtype (V) in 29 probably genetically connected strains, we found that even 5 strains from Intensive care units (ICU) and 3 from the Surgical Clinics had completely identical phenotypic and genotypic characteristics. Although we could not confirm the epidemicity of the strains, the thesis about their probable clonal connection in our hospital environment remains.

Conclusion: Our investigation disclosed the necessity of continual detection and analysis of MRSA strains (their phenotypic and genotypic characteristics) as a solid ground in implementation of correct strategy for continual prevention of life threatening infections that they may cause.

Key words: MRSA, MSSA, PFGE

B.5

"PCR BASED METHODS FOR DIAGNOSIS OF HUMAN BRUCELLOSIS"

Taleski V.

Institute of Preventive Medicine, Military hospital, Skopje, Macedonia

Introduction: Human brucellosis has been attributed to *B. abortus, B. melitensis, B. suis,* and *B. canis* and more recently to strains resembling *Brucella* isolated from marine mammals. *Brucella* has been isolated from human tissue samples, blood, urine, cerebrospinal fluid which are suitable for analysis by PCR.

Brucella species are highly monomorphic with minimal genetic variation among species.

Brucella genome consists of two circular hromosomes, has been completely sequenced for *B. melitensis, B.abortus* and *B. suis. B. melitensis* genome contains 3,294,931 base pairs (bp) - chromosome I of 2,117,144 bp and chromosome II of 1,177,787 bp. *Brucella abortus* chromosome I contains 2,124,241 bp and chromosomes II is 1,162,204 bp.

Methods: Genes encoding for DNA replication, protein synthesis, core metabolism, and cell-wall biosynthesis can be found on both chromosomes.

The first PCR based assays, used for genus-specific identification of *Brucella,* amplified genes encoding: 43-kDa outer membrane protein of *B. abortus* (primers NP, amplicon size 635 bp); 31-kDa *B. abortus* protein (primers B4/B5, size 223 bp); omp-2/ membrane extern *B. abortus* protein (JPF/JPR, size 193 bp); *B. abortus* 16S rRNA (Ba148-167F/Ba928-948R primers, size 800 bp); *B. abortus* 16S rRNA (F4/R2 primers, size 905 bp).

The most frequently described PCR target for the diagnosis of human brucellosis is the *bcsp31* gene encoding a 31-kDa antigen conserved among *Brucella spp.*

An insertion sequence (IS711) element named *IS6501,* 836 bp in length, occurs 20-35 times in the *B. ovis* genome and 5-15 times in other *Brucella* species. Most *Brucella* species contain at least one copy of *IS711* at a unique chromosomal location. The multiplex assay consists of one common primer anchored in the *IS711* and a species-specific primer that binds to the unique sequence allowed species identification determined by the size of the amplicon.

Results: In our research with R.A.P.I.D. PCR detecting *Brucella* DNA from peripheral blood samples, using specific set of primers for *IS711* and *bcsp31* showed: sensitivity of 56% (*bcsp31*), 10% (*IS711*) and specificity of 100%.

Conclusion: The advantages of PCR for diagnosis of human brucellosis are its high specificity and sensitivity, rapid detection and identification. Two possible limitations of PCR are: false-positive as a result of contamination and false negative due presence of inhibitory compounds. Effective PCR detection of *Brucella* from peripheral blood in order to get a better results requires sampling at the beginning of the disease, more efficient concentration techniques or larger volumes of blood for processing.