PP072—URINARY TRACT INFECTIONS TREATMENT—PRESCRIBING PATTERNS, GUIDELINES, AND LOCAL RESISTANCE IN HEALTH CENTRE NOVI SAD

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Introduction: It is estimated that incidence of urinary tract infections (UTI) in a whole world is ~150 million per year. In Health center Novi Sad (out hospital care), UTIs are after respiratory tract infections most common reason for prescribing antibiotics. Usual practice is empiric treatment of UTIs, while urine analysis is done in case of empiric treatment failure, recurrent or complicated UTIs.

Most common pathogen in UTIs is Escherichia coli. The aim of the study was to analyze prescribing habits, compliance of prescribing with national guidelines, and local resistance of isolated bacteria.

Patients (or Materials) and Methods: Novi Sad Health center offers health services to a population of ~385,000 inhabitants. Study was done in period from January – December 2012. Data on drug prescribing and most common bacteria isolated from urine samples were collected, analyzed, and compared with national guidelines on treatment of UTIs.

Results: Of about 20,000 urine samples analyzed, ~30% were positive. The most common bacteria isolated were E. coli (~70%), Proteus mirabilis, Klebsiella pneumoniae, and Enterococcus species, all 3 with ~8% incidence. There were ~40,000 prescriptions for the treatment of UTIs. Most frequently prescribed drug was cefalexine (~30%), followed by ciprofloxacin (~25%), piperacilid acid (~13%), co-trimoxazol (~11%), and amoxicilline + clavulic acid (~4%).

Conclusion: Deviations in prescribing habits regarding the national guidelines include: (1) most frequently prescribed drug is cefalexine, recommended only in case of allergy to sulpha-derivates; and (2) fluoroquinolones are contraindicated; additional problem is decreased sensitivity to cefalexine in most frequently isolated bacteria E. coli, P. mirabilis, K. pneumonia, 47.44%; (2) although resistance of E. coli to co-trimoxazole is >20% (32%), it is still prescribed for treatment of UTIs (11% of all prescriptions); and (3) other isolated bacteria, except E. coli, have sensitivity of ≤50% to most of the recommended drugs. These data indicate that there exists a necessity to harmonize national guidelines with local resistance of bacteria. After harmonization, medical doctors should be instructed to follow the national guidelines in order to control bacterial resistance and assure positive therapeutic outcome.

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PP074—POSSIBLE EFFECT OF ALPHA-CHYMOTRYPSIN ON GROWTH FACTORS IN ALZHEIMER’S DISEASE MODEL

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Introduction: Alzheimer’s disease (AD) is a progressive disorder in which brain cells (neurons) deteriorate, resulting in the loss of cognitive functions, primary memory, judgment, reasoning, movement coordination, and pattern recognition. This study was designed to investigate the effect of α-chymotrypsin (α-ch) on management of AD in an experimental model.

Patients (or Materials) and Methods: Sixty adult female albino rats were divided into 4 groups each of 15 rats: (1) normal control rats (con group); (2) rats underwent surgery to remove ovaries (Ovx group); (3) ovariectomized group received aluminum chloride in a dose of 17 mg/kg daily, orally for 2 months, to induce AD (AD group); and (4) AD group treated with α-chymotrypsin at dose (8.1 unit/rat/d IM) for 3 months (α-ch). At the end of the experimental period, rats were sacrificed; brain samples were obtained for different biochemical analyses and histopathologic examination. The biochemical analyses included determination of transforming growth factor-β (TGF-β), brain-derived neurotrophic factor (BDNF), and vascular endothelial growth factor (VEGF).

Results: In comparison with the normal control group, the Ovx group recorded significant increase in the brain level of TGF-β, while the brain levels of BDNF and VEGF were significantly decreased. Similarly, AD group recorded significant increase in the brain level of TGF-β accompanied with significant decrease in brain BDNF and VEGF levels compared with the Ovx group. However, the treatment of the AD group with α-chymotrypsin resulted in an improvement in the biochemical parameters which reflected by decreased brain level of TGF-β accompanied with a significant increase in the brain levels of BDNF and VEGF, compared with AD group. Histopathologic investigation of brain tissue of Ovx rats administered with aluminum showed AD plaques indicating the validation of AD model. While, AD group treated with α-chymotrypsin showed great improvement in the brain morphological structure and disappearance of most of amyloid plaques.

Conclusion: This study revealed that the treatment of AD rats with α-chymotrypsin significantly ameliorates the neurodegeneration as well as modulates the essential growth factor in the brain of AD model due to its proteolytic activity, anti-inflammatory effect, and antioxidant capacity.

Disclosure of Interest: None declared.

PP077—ENDOTHELIAL DYSFUNCTION DUE TO ISCHEMIA-REPERFUSION INJURY IS NOT PREVENTED BY METFORMIN THERAPY IN HEALTHY VOLUNTEERS

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Introduction: Large observational studies in patients with type 2 diabetes mellitus (DM) have demonstrated that metformin treatment improves cardiovascular prognosis, independent of glycemic control. Subsequent animal studies, both in animals with and without DM, have indeed shown that metformin has direct acute cardioprotective effects. Whether metformin also limits ischemia-reperfusion (IR)-injury in humans is currently unknown. Therefore, in this study, we examined whether metformin treatment limits IR injury in a forearm model of endothelial IR-injury in healthy middle-aged volunteers.

Patients (or Materials) and Methods: Twenty-six healthy volunteers (age, 41 [6] years; 10 male/16 female), were randomized between pretreatment with metformin 500 mg 3 times a day for 3 days or no medication in a randomized crossover trial with a washout period of 2 weeks. Brachial artery flow-mediated dilation (FMD) was measured using high-resolution Doppler ultrasound before and after 20 minutes of forearm ischemia and 20 minutes of reperfusion. Brachial