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ZDRAVO STARENJE I PRODUŽETAK DUŽINE I KVALITETA ŽIVOTA: ULOGA FARMAKOLOŠKIH I NUTRICIONIH INTERVENCIJA

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Broj osoba starijih od 65 godina, koji u mnogim zemljama označava doba odlaska u penziju, raste velikom brzinom širom sveta, pa je procenjeno da će do 2050. godine dostići preko 1,2 milijarde ljudi. U mnogim industrijskim zemljama, procenat stanovništva u ovomu zrastu dostiže i prevazilazi trećinu celokupnog stanovništva. I dok ovo produženje dužine života predstavlja značajno dostignuće savremenih zdravstvenih nauka, kvalitet života zaostaje za dužinom u značajnom segmentu starije populacije. Ovo se ogleda u nagomilavanju hroničnih bolesti, koje ne samo da smanjuju kvalitet života, već donose veliki trošak zdravstvenom i privrednom sistemu pojedinih zemalja s obzirom na visoke troškove kompleksnog lečenja i nege, te izgubljene radne sate, kako obolelih tako i članova njihovih porodice, odnosno onih koji ih neguju. Ovo predavanje će razmotriti koncept Geronauke, koji se zasniva na ideji da bazični molekularni i celularni procesi starenja predstavljaju osnovu za razvoj hroničnih bolesti, kao što su neurodegenerativne, srčane, metaboličke i malign ebolesti. U drugom delu će se diskutovati kako se ovi procesi mogu modulirati nutricionim i farmakološkim metodama, i koliko su ta saznanja primenljiva kod ljudi.

LONGEVITY EXTENSION, HEALTHSPAN AND HEALTHY AGING: THE ROLE OF PHARMACOLOGICAL AND NUTRITIONAL INTERVENTION

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Demographic explosion of aging, or the "silver tsunami", has engulfed the globe, and it has been predicted that by 2050, the world will have more than 1.2 billion people older than 65. These older adults will be making one third or more of the population in many industrial countries between 2030 and 2050. While this is certainly a great societal success, driven primarily by health sciences, a great number of this population suffers from multiple chronic conditions, and therefore does not enjoy a healthspan (defined as the number of years spent in good health) to match its lifespan. The net effect of poor healthspan is not only affecting the person suffering from it, but rather the health and economic system of entire countries (if not the world). Older adults with multiple comorbidities exact a high health cost due to complex care, but even more, are both a direct and indirect economic burden due to lost direct working hours of themselves and their caretakers. Finally, caretakers themselves are more prone to illness. This lecture will discuss the concept of Geroscience, the idea that the fundamental processes underlying the aging process simultaneously set stage or drive many, if not all, of the age-related chronic conditions, including neurodegenerative, cardiovascular, metabolic, inflammatory and malignant diseases. I will further review current knowledge on how to manipulate the aging process, and the chronic diseases that accompany it, by dietary and pharmacologic means, and discuss how far these concepts are from broad application in humans.

PUTEVI I STRANPUTICE U LEČENJU PARKINSONOVE BOLESTI: KUDA DALJE?

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U skorašnjem revijskom radu analizirane su 143 studije koje su ispitivale efikasnost u lečenju Parkinsonove bolesti (PB). Zaključeno je da su u monoterapiji početnih faza PB efikasni neergotski agonisti dopamina (DA), oralni preparati levodope, selegilin i rasagilin, dok se kao moguća dopunska terapija stabilnih formi PB preporučuju neergotski DA, rasagilin i zonisamid, kao i fizioterapija, uz rivastigmin koji je verovatno koristan, posebno kod bolesnika sa poremećenim hodom. U kontroli motornih fluktuacija preporučuju se neergotski DA, pergolid, levodopa ER, intestinalne infuzije levodope, enta- i opikapon, rasagilin, zonisamid, safinamid i obostrana DMS STJ i GPi, dok su amantadin, klozapin i obostrana DMS STJ i GPi dejstveni u kontroli diskinezija. Međutim, najveći problem je nepostojanje terapije koja usporava neizbežnu progresiju neurodegenerativnog procesa u PB. U ovom radu diskutovaćemo takve mogućnosti u okviru 4 kategorije: (1) α-sinuklein, (2) patogenetski mehanizmi koji nisu direktno vezani za α-sinuklein, (3) ne-SNCA genetske subtipove PB i (4) moguće intervencije koje modifikuju progresiju PB, a ne utiču direktno na njenu patobiologiju. Nažalost, nije poznato da li se relevantni patofiziološki mehanizmi odigravaju u identičnom vremenskom sekvencijalnom sledu kod svih klinički zahvaćenih bolesnika ili se razlikuju zavisno od molekularnog podtipa ove bolesti, što bi neumitno diverzifikovalo i terapijski pristup.

PATHWAYS AND DEAD-ENDS IN TREATMENT OF PARKINSON'S DISEASE

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In a recent review a total of 143 new studies have been analyzed for their effectiveness in the treatment of Parkinson's disease (PD). It has been shown that clinically useful as a monotherapy of early PD were nonergot dopamine agonists (DAs), oral levodopa preparations, selegiline, and rasagiline, as adjunct therapy in early/stable PD, nonergot DAs, rasagiline, and zonisamide, for adjunct therapy in optimized PD for general or specific motor symptoms including gait, rivastigmine was possibly and physiotherapy clinically useful. In a control of motor fluctuations, most nonergot DAs, pergolide, levodopa ER, levodopa intestinal infusion, entacapone, opicapone, rasagiline, zonisamide, safinamide, and bilateral STN and GPi DBS proved to be clinically useful, while amantadine, clozapine, and bilateral STN DBS and GPi DBS were clinically useful for dyskinesia. The greatest unmet therapeutic need in PD is the development of treatment that slows the relentless progression of the neurodegenerative process. Herein we discuss these possibilities in a frame of the following 4 categories: (1) α-synuclein, (2) pathogenic mechanisms distinct from α-synuclein (most also potentially triggered by α-synuclein toxicity), (3) non-SNCA genetic subtypes of "PD," and (4) possible disease-modifying interventions not directly influencing the underlying PD pathobiology. It is still unknown whether the relevant pathophysiological mechanisms occur in a sequential fashion across most clinically affected individuals or manifest differentially in independent molecular subtypes of PD.

TRADITIONAL AND INNOVATIVE TECHNOLOGIES FOR MANUFACTURING ORAL FIXED DOSE COMBINATION DOSAGE FORMS

Paolo Colombo

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Last AAPS conferences presented a number of sessions on drug product manufacturing technologies, exploring the possibility to construct personalized oral drug products. These technologies open major opportunities for pharmaceutical companies that in the combination in one dosage form of known drugs could find novel products. This lecture intends to illustrate a novel manufacturing technology, useful for adapting the drug product to patient requirements.

Pharma industry is looking to innovation and portfolio improvement through processes that simplify the fabrication and provide proprietary products. At the same time, the Regulatory Agencies are promoting the innovation and the combination of drugs, in front of recognized advantages for patients and payers. My personal experience attempted to cover this innovation need by developing a module assembling technology as an instrument for achieving the construction of personalized medicines characterized by adaptable fixed dose combination. This process was based on the typical solid dosage form manufacturing i.e., tablet compression. The new technology will be compared with the existing classical process.

ANALYZING THE EVIDENCE OF CLINICAL PHARMACY SERVICES: HOW TO IMPROVE

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Pharmacists can improve patients' health outcomes with a series of interventions that constitute the clinical pharmacy services. But, in a highly competitive world with limited financial resources, reporting that a service is effective with a good designed study is not sufficient. A single study, even with the best design and rigorous conduct, will always have influence of known or unknown confounders that limit its generalizability. To solve this situation, the concept of evidence-based practice emerged. Synthetizing evidence means gathering the results from different studies with different confounders that biased the results differently, with the aim of balancing these biases and obtaining a picture that represents a closer image to the reality.

Many studies assessing the impact of clinical pharmacy services have been published, with different results. The quality of these studies is also very heterogeneous. When measured in terms of risk of bias, the way that we should evaluate the reliability of a randomized controlled trial, one can find room for improvement.

But this is especially true when evaluating the impact of clinical pharmacy services by the means of evidence-based methods, such as systematic reviews with or without meta-analyses. In this presentation, we will explore the results of several of these systematic reviews, and highlight their weaknesses as well as the primary studies weaknesses. Definitely, pharmacists can improve patients' health outcomes, but researchers and practitioners should make a joint effort to demonstrate this impact under the evidence-based procedures.