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Dynamic aspects of the half-life of drugs, preclinical biomarkers-un update

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Introduction: Half-life of drugs, useful substances(lab exams, calibrators, biomarkers), after the validation process, have the great application status in medical practice. Very important achieving to modify half-life of these “important substances” is direct contributors to the efficacy of treatment, different clinical decision and improving life or quality of life of the patient and more.

Aim: Importance and feature of the half-life of drugs, lab exams, reagent and calibrators, and ways to modify and affect that. We should know main “pits stops” affected half-life of drugs, functional group role, steric effect, polarization of molecules, (as if voltaren vs fenoprofen, carbamazepine vs oxcarbamazepine, testosterone vs methyltestosterone), interacting factors, responsible events (microbiome and clearance role), responsible organs (liver, kidney etc.), and importance of ways to modify half-life of them. Half-life of circulating substances is important to select biomarkers such as for myocardial infarction(ischemia modified albumin, myoglobin, CK, CK-MB, troponin, LDH), inflammatory biomarkers (soluble fraction of CD14, pentraxin-3, procalcitonin, C-reactive protein) indicators of nutritional status(retinol binding protein, prealbumin, transferrin, albumin). And glycosylated NT-proBNP (natriuretic peptide) as calibrator.

Conclusion: Biochemical events or “biochemical intervention” (conjugation, lipidation, PEG and HES methods, albumedix, cell penetration peptides or dendrimers), modify features of drugs and lab or imagery biomarkers and the ways of their applications. They’ve broken taboo of “static frame” of these important substances”, and are very useful “window”, have brought new useful discoveries, new drugs, new lab and imagery biomarkers or methods as direct contributors in efficacy of treatment, different clinical decision and improving life or quality of life of the patient and more.

Biography

Expertise in lab, medicine, especially microscopy, imunoenzymology, biochemistry exams, biomarkers, lab as a part of public health policy in Albania, improving and updating point of view in diagnosis, screening and prognosis criteria, education and curricula of lab, tech staff, environment projects and application of principles of Aarhus convention.

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