



Sarah Abboud

Nationality: Iraqi **Gender:** Female

Email address: sarahk.alkafage@uokufa.edu.iq abboud.sarah@phd.semmelweis.hu

Website: <https://yqhjp-sarah-d0qty.pyxl.ai>

<https://staff.uokufa.edu.iq/profile.html?sarahk.alkafage> |

<http://linkedin.com/in/pharmacist-chingom-64a72b115> |

<https://www.facebook.com/chingom.phar> |

Address: Budapest, Hungary (Home)

WORK EXPERIENCE

1 SEP 2022 – CURRENT Budapest , Hungary

PH.D. CANDIDATE SEMMELWEIS EGYETEM, DOCTORAL SCHOOL OF PHARMACEUTICAL SCIENCES

Her expertise in utilizing various animal pain models, especially those of neuropathic pain and opioid tolerance, has been particularly commendable. These models, which are central to her Ph.D. research, have facilitated in-depth analysis and assessment of the analgesic effects of several drugs.

Among Sarah's academic achievements, her prolific publication record stands out. With nine journal articles to her credit, she has established herself as a researcher of significant caliber. One of her most impactful contributions as the first author is the article titled "Pharmacist intervention to enhance postoperative fluid prescribing practice in an Iraqi hospital through implementation of NICE guideline," which offers valuable insights into improving postoperative care and aligning it with established guidelines.

Address Budapest, Üllői út 26.; 1428 Bp. Pf. 2., 1085, Budapest , Hungary

24 MAY 2019 – CURRENT Kufa, Iraq

PHARMACY LECTURER DEPARTMENT OF CLINICAL PHARMACY, UNIVERSITY OF KUFA

- Leading a research team, supervision of research students and staff, ensuring a commitment to the highest standards of ethics and integrity in research.
- Lead collaborative research projects at a national or international level.
- Deliver a range of high quality and inclusive teaching and support learning activities
- Assess the work and progress of students and provide them with constructive feedback.
- Proactively identify ways to improve performance through teaching design, delivery and by obtaining and analyzing feedback.
- Develop and apply innovative approaches to improving the learning environment, teaching, assessment and feedback methods
- Positively engage in the professional development of teaching, learning and assessment.
- Contribute to course development and the development of new programmed of study in an inclusive way.
- Participate in teaching initiatives at a regional, national and international level.

31 JUL 2014 – CURRENT Kufa, Iraq

CLINICAL PHARMACY COORDINATOR AL-SADER HOSPITAL IN NAJAF WITH DEPARTMENT OF CLINICAL PHARMACY, UNIVERSITY OF KUFA

- Provide pharmaceutical care to patients
- Train, mentor and manage entry-level personnel
- Manage staff schedules
- Oversee customer service standards
- Help maintain pharmacy compliance standards
- Communicate with physicians regarding medications
- Provide education to staff pharmacists
- Develop and improve organizational processes
- Measure and analyze protocols and programs for improvement

INTERN PHARMACIST BABYLON HOSPITAL FOR MATERNITY AND PEDIATRIC – BABYLON HEALTH DIRECTORATE

- To complete a structured training Programme approved by the MoHE (**Ministry of Health and Environment of Iraq**), and other activities or training as determined by the training organization.
- To undertake continuing self-directed professional development to ensure improvements in knowledge.
- To achieve competence as specified by the MoHE in all aspects of pharmacy practice.
- Take responsibility for maintaining records and gathering evidence to support the achievement of registration.
- To deliver, under supervision, patient care and pharmaceutical services.
- To develop a working knowledge of the training organization including their procedures, policies, accepted standards of practice and relevant legislation and regulatory requirements.
- To regularly review progress with the designated supervisor and undertake formal progress reviews in line with MoHE requirements.
- To practice in accordance with the professional standards set by the MoHE.
- To work weekends, bank holidays and late duty work rotas as required.

Business or Sector Human health and social work activities

1 SEP 2014 – 31 AUG 2016 Kufa, Iraq

PHARMACOLOGIST DEPARTMENT OF PHARMACOLOGY, UNIVERSITY OF KUFA

- designing and carrying out experiments.
- devising and testing hypotheses.
- testing drugs on cells or through clinical trials on humans.
- analyzing and interpreting data (often using specialist computer applications).
- making recommendations based on findings from research and experiments.
- laboratory and staff management.
- studying relevant literature.
- writing reports and papers.
- collaborating with and sharing expertise and research findings with associated staff.
- attending meetings and conferences.

8 JAN 2014 – 31 AUG 2014 Kufa, Iraq

PHARMACOGNOSY LAB DEPARTMENT OF PHARMACOGNOSY, UNIVERSITY OF KUFA

As a pharmacist (demonstrator in Pharmacognosy Lab).

● **EDUCATION AND TRAINING**

24 SEP 2016 – 24 MAY 2019 Najaf, Iraq

MASTER OF PHARMACY University of Kufa , Faculty of Pharmacy

Address Kufa, 54001 , Najaf, Iraq | **Website** <https://phar.uokufa.edu.iq/en> | **Field of study** Pharmacy | **Final grade** 85.33 |

Level in EQF EQF level 7 | **Type of credits** Credit Transfer and Accumulation System of IRAQ | **Number of credits** 36 |

Thesis Evaluation of Intravenous Fluid Therapy Prescribing and Monitoring Practice: The Role of Pharmacist Intervention

31 AUG 2006 – 30 JUN 2011 Najaf, Iraq

BACHELORS OF PHARMACY University of Kufa , Faculty of Pharmacy

Address Kufa, 54001, Najaf, Iraq | **Website** <https://phar.uokufa.edu.iq/en> | **Field of study** Pharmacy |

Final grade Excellent with Honors 5th Class of the college | **Level in EQF** EQF level 6

● **LANGUAGE SKILLS**

Mother tongue(s): **ARABIC**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	B2	B2	B2	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Digital Skills - Test Results

Information and data literacy	ADVANCED	Level 6 / 6
Communication and collaboration	ADVANCED	Level 5 / 6
Digital content creation	ADVANCED	Level 5 / 6
Safety	INTERMEDIATE	Level 4 / 6
Problem solving	ADVANCED	Level 5 / 6

Results from self-assessment based on The Digital Competence Framework 2.1

My Digital Skills

Biomolecular visualization tools like pymol,chimera,MVD | Prepare and design experimental protocols | knowledge of presentation platforms (PowerPoint, Prezi, Canva) | anesthesia and preparation of mice | SPSS | Microsoft Office (Microsoft Excel, Microsoft Word, Microsoft Power Point) | Google Drive | Google Docs | Zoom | Social Media | LinkedIn | electroretinogram (ERG), ECG recordings, EMG recording nerve/muscle activity | Brain Spinal Cord peripheral nerve mapping | neuropathic pain

PUBLICATIONS

2023
[Pregabalin–Tolperisone Combination to Treat Neuropathic Pain: Improved Analgesia and Reduced Side Effects in Rats](#)

The current treatment of neuropathic pain (NP) is unsatisfactory; therefore, effective novel agents or combination-based analgesic therapies are needed. Herein, oral tolperisone, pregabalin, and duloxetine were tested for their antinociceptive effect against rat partial sciatic nerve ligation (pSNL)-induced tactile allodynia described by a decrease in the paw withdrawal threshold (PWT) measured by a dynamic plantar aesthesiometer. On day 7 after the operation, PWTs were assessed at 60, 120, and 180 min post-treatment. Chronic treatment was continued for 2 weeks, and again, PWTs were measured on day 14 and 21. None of the test compounds produced an acute antiallodynic effect. In contrast, after chronic treatment, tolperisone and pregabalin alleviated allodynia. In other experiments, on day 14, the acute antiallodynic effect of the tolperisone/pregabalin or duloxetine combination was measured. As a novel finding, a single dose of the tolperisone/pregabalin combination could remarkably alleviate allodynia acutely. It also restored the neuropathy-induced elevated CSF glutamate content. Furthermore, the combination is devoid of adverse effects related to motor and gastrointestinal transit functions. Tolperisone and pregabalin target voltage-gated sodium and calcium channels, respectively. The dual blockade effect of the combination might explain its advantageous acute analgesic effect in the present work.

Pharmaceuticals,Open Access,Volume 16, Issue 8August 2023 Article number 1115

2023
[Telmisartan Is a Promising Agent for Managing Neuropathic Pain and Delaying Opioid Analgesic Tolerance in Rats](#)

Despite the large arsenal of analgesic medications, neuropathic pain (NP) management is not solved yet. Angiotensin II receptor type 1 (AT1) has been identified as a potential target in NP therapy. Here, we investigate the antiallodynic effect of AT1 blockers telmisartan and losartan, and particularly their combination with morphine on rat mononeuropathic pain following acute or chronic oral administration. The impact of telmisartan on morphine analgesic tolerance was also assessed using the rat tail-flick assay. Morphine potency and efficacy in spinal cord

samples of treated neuropathic animals were assessed by [³⁵S]GTPγS-binding assay. Finally, the glutamate content of the cerebrospinal fluid (CSF) was measured by capillary electrophoresis. Oral telmisartan or losartan in higher doses showed an acute antiallodynic effect. In the chronic treatment study, the combination of subanalgesic doses of telmisartan and morphine ameliorated allodynia and resulted in a leftward shift in the dose-response curve of morphine in the [³⁵S]GTPγS binding assay and increased CSF glutamate content. Telmisartan delayed morphine analgesic-tolerance development. Our study has identified a promising combination therapy composed of telmisartan and morphine for NP and opioid tolerance. Since telmisartan is an inhibitor of AT1 and activator of PPAR-γ, future studies are needed to analyze the effect of each component.

International Journal of Molecular Sciences, Volume 24, Issue 9 May 2023 Article number 7970

2023

Prevalence and Epidemiological Characteristics Associated with Hookah Smoking and Alcohol Consumption among Medical Students in Najaf, Iraq

Abstract

Background:

Reporting patterns of hookah smoking (HS) and alcohol consumption (AC) in Iraq are limited.

Objectives:

This study aims to investigate the prevalence of HS and AC among medical undergraduates in Najaf, Iraq.

Materials and Methods:

A pilot-tested online self-administered questionnaire was used to conduct a descriptive cross-sectional study. The sampling followed the "snowball" technique. The associations of HS and AC with the participants' characteristics, perceived risk of harm, motives, and consequences were tested.

Results:

The preceding month's prevalence of HS and AC (at least once) was 13.8% and 2%, respectively. The age at initiation was mainly <15 years (59.3% of smokers and 92.3% of drinkers). The presence of a friend who drinks or smokes and skipping life problems were statistically significant motives for the habits (*P*-value < 0.05). Smoking mainly caused problems with parents (10.1%) and poor performance at school or work (7%), whereas AC mainly caused problems with teachers (8.5%) and fights (5.2%).

Conclusion:

In conclusion, the prevalence of HS and AC among medical undergraduates in Najaf, Iraq, was reported, and several associated characteristics were discerned. The findings help develop targeted interventions to protect future generations of medical professionals from the hazards of HS and AC.

Medical Journal of Babylon, Volume 20, Issue 1, Pages 143 - 153 January 2023

2023

Tobacco smoking and substance use among medical undergraduates in Najaf, Iraq: prevalence and associated factors

Background

Tobacco smoking and substance use is a public health hazard. The investigations studying tobacco smoking, substance use, and their associated factors among Iraqi undergraduates are limited. Our study aimed to examine tobacco smoking, and substance use among medical undergraduates in Najaf, Iraq, and report associated characteristics.

Methods

A piloted questionnaire was utilized to conduct a descriptive cross-sectional web-based survey. The snowball technique was used for sampling. The subjects' features, perceived risk of harm, location, motivations, and effects of cigarette smoking and substance misuse were used to conduct association testing.

Results

Tobacco smoking was reported in 17.3% of the students (at least once in the previous month), and substance use in 3%. Mostly, the age of initiation was <15 years, and psychological stress (50.9%) was the reason for tobacco smoking and substance use. However, the presence of a smoker or user friend or family member was significantly associated (*p*-value < .05) with tobacco smoking and substance use.

Conclusion

The prevalence of tobacco smoking and substance use and several risk factors were identified. In addition to promoting awareness about tobacco smoking and substance use and its potential consequences, the associated characteristics reported in this study are useful when developing effective counteracting policy initiatives.

Journal of Substance Use

2023

Practices, knowledge, and attitude toward dispensing antibiotics without a prescription in Iraqi pharmacies

Dispensing antibiotics without a prescription (DAWRx) is a potential threat to global public health and can lead to antimicrobial abuse and resistance development. Further research is required to examine the characteristics of DAWRx practice in Iraq. This study aimed to investigate the practices of DAWRx in Iraqi community pharmacies. A semi-

structured, validated, pilot-tested online questionnaire was used to conduct a descriptive cross-sectional study in March 2020 among the members of the Iraqi Pharmacist Syndicate. The questionnaire contained five sections: demographics, antibiotic dispensing knowledge, and the prevalence, sources, and characteristic features of DAWRx practices. The results are presented using descriptive statistics and significant associations were reported. A total of 403 respondents completed the questionnaire and, of them, 363 were analyzed. Despite having a satisfactory knowledge of dispensing (64.7%), the practice of DAWRx was prevalent (98.3%). DAWRx was reported based on the pharmacies' recommendation (30.58%) and patients' request for antibiotics. Adults and pediatric patients received antibiotics from pharmacies for various conditions. Injectable antibiotics were also dispensed without a prescription (mainly ceftriaxone, $n = 51/72$). Moreover, the prevalence and the daily number of antibiotics dispensed were significantly associated with sex, pharmacy attitude toward DAWRx, and DAWRx upon patients' request. A significant association was noted between the knowledge of dispensing inquiries and the prevalence of and attitude toward DAWRx ($p < 0.05$). Impactful intervention strategies based on patterns identified in this study should be developed to improve antibiotic dispensing in community pharmacies and safeguard public health from the adverse effects of antimicrobial resistance.

Journal of Public Health and Development, Volume 21, Issue 1, Pages 15 - 31 January-April 2023

2022

A review of pharmacogenetics of anticoagulant therapy: Heparins, rivaroxaban, apixaban, and dabigatran

Variances in the patients' outcomes have been a well-documented challenge in anticoagulant therapy. A clinical encounter with a thromboembolic or a hemorrhagic event, due to subtherapeutic or adverse effects of an anticoagulant, is often managed by switching the anticoagulant agent into another, which is more specific and direct-acting. This management approach is usually associated with a financial burden. Additionally, the certainty of achieving better efficacy and safety profile is still questionable. Genetic variants affecting the protein sites that are involved in the anticoagulant pharmacokinetic and pharmacodynamics interactions have been suggested to contribute to the variability in the response to anticoagulant therapy. The current work reviewed the studies investigating the response variability associated with the anticoagulant therapy (heparins, rivaroxaban, apixaban, and dabigatran) and the potential pharmacogenosy contributing to such response variability. Several genetic polymorphisms were reported as potential contributors to variances in response to anticoagulant therapy and were associated with adverse events. A link has been proposed for heparin resistance with single nucleotide polymorphisms (SNPs) of the anti-thrombin-encoding gene (SERPINC1) as well as heparin-induced thrombocytopenia with human leukocyte antigen (HLA) variant allele (HLA-DRB3FNx0101:01). Several investigations also remarked variations in the serum drug level of direct oral anticoagulants (DOACs) that are associated with SNPs in the proteins contributing to the pharmacokinetics of the anticoagulant agent. Several studies discerned significant associations between SNPs in the ABCB1 gene and elevations in the serum levels of rivaroxaban, apixaban, and dabigatran. Moreover, carriers of the variant genotype of the SNP (rs776746) in the cytochrome P450 3A5 enzyme-encoding gene (CYP3A5) had significantly higher drug levels when compared with the non-carriers. In contrast, some SNPs were reported to impart a protective phenotype to the carrier. The SNP (rs2244613) in the carboxylesterase-encoding gene (CES1) has been significantly associated with a decline in dabigatran trough levels and a lower risk of hemorrhage. Further investigations are essential to elucidate the extent of pharmacogenetics-based alterations in the drug levels as well as the subsequent clinical outcomes of anticoagulant therapy.

Medical Journal of Babylon Volume 19, Issue 3, Pages 332 - 340 July-September 2022

2022

Warfarin therapy and pharmacogenetics: A narrative review of regional and Iraqi studies

Abstract

The aim of this work was to review several studies investigating the effects of genetic polymorphisms on warfarin dosing in regional and Iraqi studies and to report any consistent pattern of relevant findings. Despite the growing use of the recently introduced direct oral anticoagulants, warfarin is still the mainstay agent for oral anticoagulation because of its cost-effectiveness. However, a difficulty to establish a stable warfarin dose is frequently encountered. In addition to the warfarin narrow window of efficacy and safety, the main contributor to the challenging dosing is the wide range of variability in warfarin pharmacokinetics and pharmacodynamics among different patients as well as within the single patient context. A link between nonappropriateness of warfarin doses and dramatically increased risk of thromboembolic and hemorrhagic events has been well documented. Several single nucleotide polymorphisms (SNPs) in the genes implicated in warfarin pharmacokinetic and pharmacodynamic processes have been highlighted as possible contributors to warfarin dosing instability. Vitamin K epoxide reductase complex 1 gene SNPs have consistently been found to be the predominant genetic factor contributing the dosing variations. The SNP rs9923231 was significantly associated with the greatest predicting capability of warfarin dosage. However, a range of about 30%-50% of the variances in warfarin dosing was explained by the combined contribution effect of several genetic and nongenetic (clinical) factors in the regional and Iraqi studies.

Medical Journal of Babylon, Volume 19, Issue 3, Pages 324 - 331 July-September 2022

2021

Organization factors influencing nurse ability to prevent and detect adverse drug events in public hospitals using a patient safety model

Abstract

The objective of this study was to measure organization factors that can influence the ability of nursing staff to prevent and detect ADEs in public hospitals using Systems Engineering Initiative for Patient Safety (SEIPS) model. Methods: This was a multi-center cross-sectional study. The study included a self-administered paper-based survey which was distributed and collected between October through December 2019. The study participants were nurses from 11 public hospitals located in two Iraqi provinces. Binary logistic regression was used to measure the relationship between the independent SEIPS factors (persons, organizations, tools, tasks, and environments) and the incidence of ADEs (outcome variable). Results: The study recruited 603 nurses (68.3% men) from 11 public hospitals across two provinces. Less than half (48.8%) of the nurses received enough training to detect ADEs, 43.1% had adequate experience to detect ADEs, and 69.8% had to report ADEs in a special record. More than three-quarters (78.4%) believed that their jobs need fast work. Two of the five SEIPS model domains had significant negative association with the incidence of ADEs including organization (nurse-physician collaboration) and nurse experience in ADE detection. Conclusions: Nursing staff face several challenges to prevent and minimize ADEs including shortages in nurses, inadequate nurse experience in ADE detection, no training for ADE detection was received, fear of reporting ADEs, and a lack in monitoring equipment. Increasing nurse/patient ratio and providing more monitoring equipment and training courses can minimize ADEs and enhance their detection.

Saudi Pharmaceutical Journal, Open Access, Volume 29, Issue 10, Pages 1216 - 1222, October 2021

2019

Pharmacist intervention to enhance postoperative fluid prescribing practice in an Iraqi hospital through implementation of NICE guideline

Objective: The objectives of this study were to evaluate the current practice of postoperative fluid prescribing and assess the effectiveness of pharmacist-led intervention in the implementation of the National Institute of Health and Care Excellence (NICE) fluid therapy guideline in an Iraqi hospital. **Methods:** The prospective interventional study was conducted at AL-Hilla Teaching Hospital, Babylon, Iraq between November 2017 and July 2018. The study included two phases: The pre-intervention phase with 84 patients and the post-intervention phase with 112 patients. A pharmacist provided training and educational sessions for the hospital physicians and pharmacists about the NICE guideline of fluid therapy. The researcher calculated the amount of given post-operative fluids and compared to the NICE guideline and also measured the patients' body weight, serum Na, K and creatinine pre-and post-operatively. **Results:** The pre-intervention phase showed no correlation between the amounts of prescribed fluids and body weight which caused increases in patients' body weight. In pre-intervention phase, 6% of patients experienced hyponatremia, 19% had hypernatremia and 7.1% had hypokalemia. In the post-intervention phase, abnormal level of electrolytes and patient weight gain decreased significantly. Additionally, the intervention led to a strong correlation between body weight and amount of prescribed fluids in addition to lowering the incidence of electrolyte disturbances. **Conclusions:** A high proportion of patients in the pre-intervention phase experienced fluid overload, weight gain and electrolyte disturbances when fluid therapy was not prescribed in accordance with the NICE guidelines. The pharmacist-led intervention increased the surgeon awareness of the proper use of the NICE guideline which decreased the incidence of fluid-related complications and the inconsistency of fluid prescribing. Pharmacists can play a critical role to enhance post-operative fluid prescribing and minimize fluid-induced complications.

Pharmacy Practice, Open Access, Volume 17, Issue 3 July-September 2019 Article number 1552

2024

Phenylephrine Produces Alpha 2-mediated Antiallodynic Effect in Rats with Neuropathic Pain

Phenylephrine Produces Alpha 2-mediated Antiallodynic Effect in Rats with Neuropathic Pain

Semmelweis University, Basic Medical Science Center

Address: H-1094 Budapest, Tűzoltó u. 37-47.

Abstracts can be submitted by PhD and MD-PhD students and members of the Students' Scientific Association of Semmelweis University. This is the institutional conference for holders of ÚNKP, SE250+ and KDP fellowships for whom the participation is obligatory according to their contracts.

Abbood, Sarah K., PhD Scientific Days 2024 Budapest, 9-10 July 2024

2024

Glycine Transporter 1 Inhibitors Minimize the Analgesic Tolerance to Morphine

Opioid analgesic tolerance (OAT), among other central side effects, limits opioids' indispensable clinical use for managing chronic pain. Therefore, there is an existing unmet medical need to prevent OAT. Extrasynaptic N-methyl D-aspartate receptors (NMDARs) containing GluN2B subunit blockers delay OAT, indicating the involvement of glutamate

in OAT. Glycine acts as a co-agonist on NMDARs, and glycine transporters (GlyTs), particularly GlyT-1 inhibitors, could affect the NMDAR pathways related to OAT. Chronic subcutaneous treatments with morphine and NFPS, a GlyT-1 inhibitor, reduced morphine antinociceptive tolerance (MAT) in the rat tail-flick assay, a thermal pain model. In spinal tissues of rats treated with a morphine–NFPS combination, NFPS alone, or vehicle-comparable changes in μ -opioid receptor activation, protein and mRNA expressions were seen. Yet, no changes were observed in GluN2B mRNA levels. An increase was observed in glycine and glutamate contents of cerebrospinal fluids from animals treated with a morphine–NFPS combination and morphine, respectively. Finally, GlyT-1 inhibitors are likely to delay MAT by mechanisms relying on NMDARs functioning rather than an increase in opioid efficacy. This study, to the best of our knowledge, shows for the first time the impact of GlyT-1 inhibitors on MAT. Nevertheless, future studies are required to decipher the exact mechanisms.

Galambos, A. R., Essmat, N., Lakatos, P. P., Szücs, Jr., Abbood, S. K., Karádi, D. Á., Kirchlechner-Farkas, J. M., Király, K., Benyhe, S., Riba, P., Tábi, T., Har., & Al-Khrasani, M. (2024). International Journal of Molecular Sciences, 25(20), 11136.

● CONFERENCES AND SEMINARS

5 JUN 2024 – 7 JUN 2024 Mátraháza, Gyöngyös, Heves County, Hungary

HUPHAR 2024

HUPHAR Congress will be held in Mátraháza between 5-7 June 2024 with the participation of foreign pharmacological societies. We ask our members to note the date, we will keep you updated with details, which will be published on the conference website: <https://huphar.org/huphar2024/en/welcome-english/>.

Link <https://huphar.org/huphar2024/en/welcome-english>

22 NOV 2024 – 23 NOV 2024 PECS

MedPécs2024

The Doctoral Student Self-Government of the University of Pécs is organizing the MedPécs Conference, a professional event combining the fields of medicine and health sciences, online this year. The aim of the conference is to provide an opportunity for young researchers to present and discuss their scientific work in the field of health. The primary language of the conference is English, but we also provide the opportunity to present lectures in Hungarian. We welcome applications from both doctoral students and graduate students with outstanding scientific work.

Link <https://dok.pte.hu/hu/hirek/medpecs2024-konferencia-20241122-pentek>

11 NOV 2024 – 13 NOV 2024 Budapest, Hungary

THE ANTIALLODYNIC EFFECT OF PHENYLEPHRINE IN RATS WITH NEUROPATHIC PAIN

Treatment of neuropathic pain (NP) remains an unsolved problem thus far. The spinal cord plays a crucial role in pain transmission and modulation either by interfering with the ascending or descending pain pathway. Among the systems that have been proven to participate in modulating pain perception in the spinal cord is the adrenergic system. Phenylephrine (PE) has been considered a selective α_1 -adrenoreceptor agonist. Our previous work and a few literature studies have shed light on the indirect effect of PE in relation to non-calcium-dependent cytosolic norepinephrine release. Herein we investigated the effects of PE against allodynia induced by rat partial sciatic nerve ligation (pSNL), a model for mononeuropathic pain. Intrathecal PE produced a significant antialloodynic effect in the operated paws. The antialloodynic effect of PE was sensitive to co-administered 30 nmole/rat prazosin and idazoxan, the selective antagonists for α_1 and α_2 adrenoreceptors, respectively. Applying the mouse vas deferens (MVD) assay, the obtained results demonstrated that the test antagonists retained their selectivity for the corresponding receptors at concentration ratios of 3 to 1 for prazosin and idazoxan, respectively. To have a full picture of the magnitude and the contribution of spinal α_1 and α_2 adrenoreceptors in the obtained analgesia in rats with NP next to the administration of PE, further future studies are required, and considering the results obtained in MVD.