

Abstract book
International Congress on Health Sciences and Medical
Technologies ICHSMT'18

21-23 October 2018, CERIST, Algiers,
Algeria



Permissions

For permission to use materials from this text, please contact us by:

Email: info@eurl-knowking.dz

Website: <http://www.eurl-knowking.dz>

E-book

The E-book is licensed under a [Creative Commons Attribution-NonCommercial 4.0 International License](#).



ISBN: 978-9931- 9446-0- 7

DOI : <https://doi.org/10.26415/978-9931-9446-0-7>

KNOWLEDGE KINGDOM



PUBLISHING

Abstract book

International Congress on Health Sciences and Medical Technologies ICHSMT'18

21-23 October 2018, CERIST, Algiers, Algeria

Editor: Dr Abdeldjalil KHELASSI

Publication of Knowledge Kingdom Publishing

www.eurl-knowking.dz

ISBN: 978-9931- 9446-0- 7

All references made to specific software applications, journal papers, books and/or companies used within this book are registered trademarks of their respective companies.



**Abstract's book of International Congress on Health Sciences and Medical Technologies
ICHSMT'18**

Editor:

Dr Abdeldjalil KHELASSI

Copyright

Copyright ©2018, Knowledge Kingdom Publishing

ISBN: 978-9931- 9446-0- 7

All rights reserved

No part of this work covered by copyright hereon may be reproduced or used in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, web distribution or information storage and retrieval systems—without the expressed written permission of the publisher.

Permissions

For permission to use materials from this text, please contact us by:

Email: info@eurl-knowking.dz

Website: <http://www.eurl-knowking.dz>

E-book

The E-book is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.



DOI : <https://doi.org/10.26415/978-9931-9446-0-7>

Contents

Contents.....	1
Preface.....	2
Committees.....	3
Keynotes.....	4
ICMT'18: International Conference on Medical Technologies 2018.....	9
ICPCBS'18: International Conference on Preclinical and Clinical Basic Sciences 2018.....	18
IWCPH'18: International Workshop on Cancer and Public Health 2018.....	29
IWPE'18: International Workshop on Publication and Ethics 2018	33

Preface

The third edition of the International Congress on Health Sciences and Medical Technologies ICHSMT'18 held at CERIST, Algiers Algeria, between 21 and 23 October 2018. It is an interdisciplinary platform for ensuring a powerful environment of research finding and technological innovations. The manifestation passed from an international conference to an international congress which include two conferences and two workshops. Via structured conferences, workshops and sessions a diversity of research opportunities are collected and propagated through establishments and researchers.

We are proud to announce that this edition attracted researchers from 13 nations including: Algeria, Germany, Iran, Switzerland, Netherlands, Denmark, Malaysia, France, Morocco, Brazil, Egypt, India and Pakistan. The author's affiliations were from several departments such as medicine, biology, physics, chemical sciences, computer science, mathematics, environment, pharmacy, electrical and electronic engineering, and mechanical engineering.

We are also proud to acknowledge 43 accepted presentations, in which we report 5 keynotes from reputed professors: Prof Md Wolfgang Seger and Prof Md Hans-Peter Berlein from Germany, Pr Dr Eng Habib Zaidi from Switzerland, Dr D. Jude Hemanth from India and Pr Dr Eng Yazid Cherfa from Algeria. The congress includes two international conferences: ICMT'18: International Conference on Medical Technologies 2018 and ICPCBS'18: International Conference on Preclinical and Clinical Basic Sciences 2018. In addition, two international workshops are scheduled: IWCPH'18: International Workshop on Cancer and Public Health 2018, and IWPE'18: International Workshop on Publication and Ethics 2018 animated by Dr Mehrdad Jalalian.

We would like to acknowledge our Program Committee and Editorial Advisory Board for the generous contributions of their time and expertise to this manuscript. We would like, in particular, to acknowledge Pr Aourag Abdelhafid the director of Algerian General Direction of Scientific Research and Development DGRSDT, Dr Nadjib Bardach the director of CERIST and the efforts of those who helped us make this congress possible. We mention here the partner institutions: Knowledge kingdom publishing, CERIST, University of Tlemcen, DGRSDT, Medical Technologies Journal, and electronic physician.

This book contains all accepted abstracts of contributions presented at ICHSMT'18. There were 47 submissions. Each submission was reviewed by one to two reviewers. The committee decided to accept 43 presentations i.e the rate of acceptance was 91.48%.

Dr Abdeldjalil Khelassi
Chairperson of ICHSMT'18
October 2018

Committees

Chairs

Dr Abdeldjalil Khelassi	University of Tlemcen	Algeria
Dr Abdelkrim Meziane	CERIST	Algeria

Scientific committee

Pr Kaouel Meguenni	CHU Tlemcen	Algeria
Dr Vania V. Estrela	Universidade Federal Fluminense	Brazil
Prof. Dr. Wolfgang Seger	German Federal Association for Rehabilitation	Germany
Prof. Dr.med. H.-Peter Berlien	Director of clinic for laser medicine in Berlin	Germany
Dr. Jalalian Mehrdad	Electronic Physician Journal, Mehrafarin Scientific Publishing	Iran
Pr SYED TAJUDDIN BIN SYED HASSAN	Universiti Putra Malaysia	Malaysia
Prof. Dr. Klaus-Dieter Althoff	University of Hildesheim	Germany
Pr. Nouredine DJEBLI	Mostaganem University	Algeria
Pr. Joseph Kajima Mulengi	University of Tlemcen	Algeria
Pr Fethi bereksi reguig	University of Tlemcen	Algeria
Pr Abdeslam Taleb	University of Tlemcen	Algeria
Pr Abdelouahab MOUSSAOUI	Ferhat Abbas University of Sétif	Algeria
Pr Med Amine Chikh	University of Tlemcen	Algeria
Pr Mohammed El Hassouni	Mohammed V University in Rabat	Morocco
Pr Said Ghalem	University of Tlemcen	Algeria
Pr Yazid CHERFA	Université Saad Dahlab de Blida1	Algeria
Pr Ahmed Abdelhafiz	Asiut Clinic for Gynecology and Obstetrics	Egypt
Pr Ouahiba HADJOUJ	Hôpital Nafissa Hamoud (ex Parnet)	Algeria
Dr Muhammed Ajmal Shah	Government College University Faisalabad	Pakistan
Pr Habib ZAIDI	Geneva University Hospital, University of Groningen, University of Southern Denmark, University of Cergy-Pontoise	Switzerland, The Netherlands, Denmark, France

Editorial Advisory Board

Dr Abdeldjalil Khelassi
Dr Abdelkrim Meziane
Mr Hermes Loschi
MsAssia Keniche
Dr Lamiche Chaabane
Mr Abdellatif Bouzid Daho
Dr AbdErrezak SEBAA
Dr Missoun Fatiha
Pr Houria Sahel
Ms Amel BENSOUNA
Dr Mohammed Seddiki
MrAbdallah Bengueddoudj
Dr Fatima Zohra Younsi
Pr Hayet Merouani
Dr Samira Benbekhti
Ms Wafa Boukellouz

Keynotes

Principles of Laser Application in Medicine

Abstract

Laser are used today more and more in therapy and diagnostics. In diagnostics they are used additional to other procedures like metabolic monitoring (fluorescence diagnostic) resp. for optical imaging (Infrared-diaphanoscopy).

Main topic of medical applications therapy, in which Laser is sometime a surgical instrument sometime a central, alone standing therapeutic procedure.

But it is forgotten that Laser is light, a special light, but the biological reactions are in general not different from normal light. This is important to prevent disappointments on the other to use the experience of photobiology and light therapy. In medicine Laser is used since his invention 40 years ago mostly destructive but nature uses light since billion of years mainly constructive! So Lasers are used not only for cutting and removal on surfaces the application is more complex. This is caused by a continuous technical development of Laser-systems and accessories, like endoscopes, but more important is the better knowledge about Laser-tissue-interaction.

The field of application is broad, there are daily new indications but other are replaced by the development of other techniques like Radiofrequency.

The indications are from plastic surgery over the congenital and vascular diseases to open surgical organ and tumor resections. Very important is Laser in endoscopic surgery and in interstitial Lasercoagulation. But in contrast to thermal procedures the indication for Photodynamic Therapy are dysplasias and virus-induced tumors.

The experiences by the Photodynamic Therapy and the better understanding of biochemical metabolic processes open the field of indications for this therapeutic principle also for benign chronical diseases.

By: Prof. Dr.med. H.-Peter Berlien



After graduating from the faculty of medicine at the FreieUniversität Berlin in 1976 Prof. Berlien started his surgical education and received his doctorate specializing in paediatric surgery in 1981.

In 1985 he became medical director of the Centre for Laser and Medical Technology Berlin (LMTB). In 1989 he became professor for laser medicine at the FreieUniversität Berlin. In 1996 he has been head of department for laser medicine at the KlinikumNeukölln and Elisabeth Klinik Berlin. 2014 he handed over the position as the head of the department to his Vice Director

Dr. Carsten Philipp and continues his work as Director for Science and Research in Laser Medicine within the Department. Since this time he works in science and development. He is member of several international committees and serves even as convener in International Standardization Organization

Multimorbidity, a challenge for medical treatment, research and health care management

Abstract

Multimorbidity is a highly prevalent phenomenon in the elderly and of growing public health impact in aging societies due to rising life expectancies, more effective medical treatment and comprehensive social care facilities, resulting in longevity.

The increasing number of patients at an age of 60 and more are expected to have between 5 to 7 active diagnoses with multiple conditions and pathological states, varying recommendations for therapy and diverse personal wishes and contextual factors influencing. Disease-disease interactions have an impact on patient management processes, disease-disease medication interactions must be considered and balanced and potential medication-medication interactions kept in mind and avoided. Furthermore the interaction between somatic and psychiatric diseases is a completely underestimated field of conflicts and misjudgements. Multimorbidity is an important field of research as well. Thus the lack of guidelines covering multimorbidity is more the rule than an exemption if not explicitly addressing old age.

Multimorbidity is going along with multiple changing of medical consultations, the need for a comprehensive care by different professions with time-consuming and strenuous transitions and communication routes, repeated hospital treatments, polypharmacy with frequently undesired mutual actions of drugs, unnecessary or redundant examinations and conflicting instructions for therapy resulting in accumulating complications unless rationally analyzed.

Multimorbidity is more than an addition of different diseases. It is a complex net of mutually influencing factors like physical functioning, mental well-being, social relationships and environmental factors. Therefore therapy of multimorbidity is more sensitive for contextual factors, needs multimodal and multidisciplinary support with attention for the patients' resources and an increasing need for prevention, therapy, rehabilitation, assistive technologies and social care at the place of residence or nearby.



By: *Professor Dr. med. Wolfgang Seger is a specialist in Internal Medicine, Gastroenterology, Rehabilitation and Social medicine. He is Chairman of the Health Advisory Board of the Federal Rehabilitation Council in Germany. He recently retired from the Directory of the Health and Long-Term-Care Advisory Board of all Social Health Insurances in Lower Saxony, Germany which he served for more than 25 years. Prof. Seger is chair of the Health Sciences Section of the Medical Technologies Journal.*

Adventures in the multimodality imaging technology wonderland

Abstract

Early diagnosis and therapy increasingly operate at the cellular, molecular or even at the genetic level. As diagnostic techniques transition from the systems to the molecular level, the role of multimodality molecular imaging becomes increasingly important. Positron emission tomography (PET), x-ray computed tomography (CT) and magnetic resonance imaging (MRI) are powerful techniques for *in vivo* imaging. The inability of PET to provide anatomical information is a major limitation of standalone PET systems. Combining PET and CT proved to be clinically relevant and successfully reduced this limitation by providing the anatomical information required for localization of metabolic abnormalities. However, this technology still lacks the excellent soft-tissue contrast provided by MRI. Standalone MRI systems reveal structure and function, but cannot provide insight into the physiology and/or the pathology at the molecular level. The combination of PET and MRI, enabling truly simultaneous acquisition, bridges the gap between molecular and systems diagnosis. MRI and PET offer richly complementary functionality and sensitivity; fusion into a combined system offering simultaneous acquisition will capitalize the strengths of each, providing a hybrid technology that is greatly superior to the sum of its parts. However, the technology suffers from a number of drawbacks that will be discussed in this lecture.

This talk also reflects the tremendous increase in interest in multimodality molecular imaging using PET as both clinical and research tool in the past decade. It offers a brief overview of the entire range of technical developments from basic principles to various steps required for obtaining quantitatively accurate data from dedicated combined PET/CT and PET/MR systems including algorithms used to improve image quality and achieve high quantitative accuracy. Future opportunities and the challenges facing the adoption of multimodality imaging technologies and their role in biomedical research will also be addressed.



By **Prof. Habib Zaidi**^{1,2,3,4}

¹Division of Nuclear Medicine and Molecular Imaging, Geneva University Hospital, Switzerland

²Department of Nuclear Medicine and Molecular Imaging, University of Groningen, The Netherlands

³Department of Nuclear Medicine, University of Southern Denmark, Odense, Denmark

⁴Institute for Advanced Studies, University of Cergy-Pontoise, Cergy, France

Email: habib.zaidi@hcuge.ch

Web: <http://pinlab.hcuge.ch/>

Medical Imaging – Principles and Applications

Abstract

Medical imaging was born just over a hundred years ago. Today, imaging techniques are numerous, often complementary. They were developed from major discoveries in 20th century physics: X-rays and radio waves, natural and finally artificial radioactivity, and magnetic properties of nuclei and atoms. They rely on advances in medicine and advances in physics, chemistry, applied mathematics, electronics and computer science. Medical imaging is constantly evolving and improving with the use of innovative technologies that are increasingly accurate and efficient. It is now possible not only to observe an organ, but also to see it work, thanks to still or moving images. Medical imaging is increasingly used for diagnosis, in addition to clinical examination and other investigations, such as biological tests or neuropsychological tests.

Since the very first radiograph, in 1895, medical imaging has made striking progress. Revolutionizing medicine, it allows today to visualize bones, tissues and organs in a more accurate and less invasive way. The goal? Track anomalies, obviously, but also, to heal. In research laboratories, many scientists are working to improve different technologies and invent new ones.

In this presentation, two aspects of medical imaging will be exposed. The first aspect is concerned with image acquisition techniques, used for diagnosis and for the search for lesions, mentioning that in some cases, a single modality cannot suffice, and must be combined with others, to arrive at the desired result. This aspect has revolutionized medicine by giving immediate and reliable access to information, until then “invisible” to clinical diagnosis, such as anatomical characteristics, or even certain aspects of metabolism (functional imaging) of organs.

The second aspect is the processing and analysis of images, using developed software, to help with diagnosis or help with surgery. All of the used techniques to extract relevant information from a medical image will be used, and disciplines such as mathematics, computer science, image processing (and signal processing in general) will be involved in this domain.

Here too, a cooperation of mathematical tools is necessary to highlight the pathology with maximum precision, to characterize it, and to draw from the information that the practitioner needs.

During the presentation of these two aspects, practical applications will be given and examples of treatment will be discussed.

By Pr Yazid Cherfa Université Saad Dahlab de Blida1 Algeria.

Innovative Artificial Intelligence (AI) Approaches for Medical Image Analysis

Abstract

Artificial Intelligence techniques such as Artificial Neural Networks (ANN) and Fuzzy logic theory have gained significant attraction from all domains of practical applications. One of the prime application areas is the medical field in which medical image processing needs the assistance of AI based approaches for better performance of the system. The performance of the AI based medical image analysis approaches are judged based on the accuracy and convergence rate (time requirement). However, the million dollar question is whether the conventional AI based systems can satisfy both these performance measures in the same single approach. The answer is a big NO which clearly reveals the scope of improvement in the conventional AI based medical image processing approaches.

In this talk, I propose several innovative ANN and fuzzy based approaches for medical image analysis. The innovative ANN and fuzzy based approaches are developed by performing suitable modifications in the training algorithms and architecture of conventional ANN and fuzzy approaches. The efficiency of the proposed approach is explored in the context of abnormality detection in Magnetic Resonance (MR) brain tumor images. The algorithms will be clearly detailed along with the case study based on my research work.

This talk will definitely trigger a spark in the minds of young researchers working/beginning to work in the area of AI to develop an innovative system on their own. This talk also will serve as an ideal platform for a newcomer to understand the interesting aspects of AI towards medical perspective.



By Dr . D. Jude Hemanth received his B.E degree in ECE from Bharathiar University in 2002, M.E degree in communication systems from Anna University in 2006 and Ph.D. from Karunya University in 2013. His research areas include Computational Intelligence and Image processing. He has authored more than 100 research papers in reputed SCIE indexed/Scopus indexed International Journals and International Conferences with leading publishers such as Elsevier, Springer, IEEE, etc. His Cumulative Impact Factor is more than 50. He has authored 1 book with (VDM-Verlag, Germany) and 11 edited books with reputed publishers such as Elsevier, Springer, IET and IOS Press.

He has been serving as Associate Editor of SCIE Indexed International Journals such as IEEE Access Journal (IEEE) and Journal of Intelligent and fuzzy systems (IOS Press). He serves as an Editorial Board member/Guest Editor of many journals with leading publishers such as Springer (Sensing and Imaging) and Inderscience (IJAIP, IJICT, IJCVR, IJBET). He is the series editor of “Biomedical Engineering” book series in Elsevier.

He has been also the organizing committee member of several international conferences across the globe such as Portugal, Romania, UK, Egypt, China, etc. He has delivered more than 50 Invited Lectures in International Conferences/workshops. He holds professional membership with IEEE Technical Committee on Neural Networks (IEEE Computational Intelligence Society) and IEEE Technical Committee on Soft Computing (IEEE Systems, Man and Cybernetics Society). He has completed 1 funded research project from CSIR, Govt. of India. He also serves as the “Research Scientist” of Computational Intelligence and Information Systems (CI2S) Lab, Argentina and RIADI Lab, Tunisia. Currently, he is working as Associate Professor in Department of ECE, Karunya University, Coimbatore, India.

ICMT'18: International Conference on Medical Technologies 2018

Assessing the adaptability of 'Intel ACAT Assistive Platform' on people with disabilities in Algeria

Nadji Ahmed Zakariya¹, Boudour Rachid¹

¹Embedded Systems Laboratory - ESLA, University of Badji Mokhtar Annaba, Algeria

Nadji.zakaria@gmail.com

Abstract:

Background: Without assistive technology, people with disabilities and older people and others in need are often excluded, isolated and locked into poverty, and the burden of morbidity and disability increases.

Assistive Context-Aware Toolkit (ACAT) is an open source platform developed by Intel Labs and used by Dr. Stephen Hawking, it enables people with motor neuron diseases (MND) or other severe disabilities to have full access to the capabilities and applications of their computers through very constrained interfaces suitable for their conditions.

Methods: The authors report the potentials offered by the Intel ACAT platform, to enhance the personal autonomy and quality of life of people with acute disabilities in Algeria by evaluating its integration and identifying its strengths and weaknesses.

Results: The Intel assistive platform ACAT can be used in French or English languages by patients in Algeria as well as elsewhere. Therefore the Arabic-speaking users still unfortunately cannot use the platform; otherwise, the system though works satisfactorily and seems very promising for the Algerian Context.

Conclusion: The focus of this paper is put on testing and validating the Assistive Context-Aware Toolkit (ACAT) in Algerian context, it outlines its applications and how it may be used to increase independence, improve personal productivity and enhance the quality of patient's life in that context. It also illustrates the different faced issues and some possible solutions.

Keywords: Intel ACAT, Assistive Technology, Disabled People, Algeria

References

- [1] Pete Denman, Lama Nachman, and Sai Prasad. 2016. Designing for "a" user: Stephen Hawking's UI. In *Proceedings of the 14th Participatory Design Conference: Short Papers, Interactive Exhibitions, Workshops - Volume 2* (PDC '16), Claus Bossen, Rachel Charlotte Smith, Anne Marie Kanstrup, Janet McDonnell, Maurizio Teli, and Keld Bødker (Eds.), Vol. 2. ACM, New York, NY, USA, 94-95. DOI: <https://doi.org/10.1145/2948076.2948112>
- [2] World Health Organization, 2017. Improving access to assistive technology. Report by the Director-General, EB142/21
- [3] Assistive context-aware toolkit (acat) user guide, https://01.org/sites/default/files/documentation/acat_user_guide.pdf

Fully Automatic Segmentation of Sphenoid Sinus in CT Images with 3D Convolutional Neural Networks

Kamal Souadiah¹, Ahror Belaid¹, and Douraied Ben Salem^{2,3}

1 Medical Computing Laboratory (LIMED), University of Abderrahmane Mira, 06000, Bejaia, Algeria

2 INSERM UMR 1101, Laboratory of Medical Information Processing (LaTIM), 5 avenue Foch, 29200 Brest, France,

3 Neuroradiology Forensic Imaging Department, CHRU Brest, La Cavale Blanche Hospital, Boulevard Tanguy Prigent, 29609 Brest, France.
skamelmail@gmail.com

Abstract:

Background: Today, deep learning (DL) algorithms have quickly become essential in the field of medical image analysis. Compared to the traditional methods, these DL techniques mainly based on convolutional neuron networks (CNN) are more efficient in extracting compact information leading towards significant improvement performance of medical image analysis system. In our knowledge automatic sphenoid sinus segmentation don't existed in the literature. This study aimed to realize a new technique for sphenoid sinus automatic segmentation using 3D CNN on computed tomography Scans (CT-scan).

Methods: Our method consists of three main steps, where the result of step is the input of another one. The first step is a preprocessing step, consisting of automatically creating and transforming the given image volume from a PACS to an image of the region of interest. Then we perform a segmentation with 3D deep CNN[1], that we adapted and parameterized to produce accurate sinus segmentation. Finally a post-processing based on mathematical morphology operations is carried out to sinus measurement and refine segmentation. This splitting in stages allowed us to improve and simplify the use of CNN at the CPU level.

Results: Our automatic sphenoid sinus segmentation method was reliable, robust, and accurate. The mean difference between our automated technique and manual technique was approximately 5%.

Conclusion: To our knowledge, only manual or semi-automatic methods have been applied for sphenoid sinus segmentation. In the present study we proposed a fully automated method for sphenoid sinus segmentation. A good correlation between the manual and our automated technique was realized. Our findings suggest that this automated tool may be applied in practice. It does not require substantial user expertise, and it is reproducible and fast.

Keywords: 3D CNN, CT-scan, Sphenoid Sinus, Automatic segmentation.

References

[1] Kamnitsas, K. Ledig, C. Newcombe, V.F.J. Simpson, J.P. Kane, A.D. Menon, D.K. Rueckert, D. & Glocker, B. (2015) Efficient multi-scale 3d cnn with fully connected crf for accurate brain lesion segmentation -proceeding of ISLES challenge, MICCAI 2015

The Impedance Cardiography Technique in Medical Diagnosis

Hadjer Benabdallah¹, DrSalim Kerai²

¹. Ph.D Student Biomedical Engineering, Department of Biomedical Engineering, Biomedical Engineering Laboratory, Faculty of Technology, University of Tlemcen, Algeria.

². Department of Biomedical Engineering, Faculty of Technology, University of Tlemcen, Algeria.

¹. hadjerbenabdallah@gmail.com

². Salim.Kerai@gmail.com

Abstract:

Background: Thoracic Electrical Bioimpedance (TEB) Technology is sometimes called Impedance Cardiography (ICG). In 1940, the Impedance Cardiography emerged; studies of this technique are applied to detect the cardiovascular diseases by measuring hemodynamic parameters using skin electrodes contact by injecting a low amplitude alternating signal. This article aimed to review the various studies based on this signal type and to present the multiple methods used for the treatment and to have a correct analysis.

Methods: This paper based on several researches made in recent years published in Science Direct, Google Scholar, and PubMed...etc. The ICG technique consists of applying an electric field longitudinally across a segment of the thorax with an amplitude in mean, high frequency and low amplitude current. To analyze the ICG signal denoising is necessary, therefore a multiple filters were proposed, and the Discrete Wavelet Transform (DWT) denoising was also used.

Results: The ICG is considered advantageous compared to other invasive conventional techniques; it gave a good correlation, and solved Doppler ultrasound and Thermodilution problems. According to the studies, the Daubechies wavelet family (db8) was the best DWT to eliminate noises. There are several algorithms for the signal characteristic point's detection.

Conclusion: For cardiovascular disease diagnosis and monitoring, the non-invasive ICG technique comes to solve the complexity problem for measurement and analyzing heart diseases based on the thoracic electrical impedance change assessment that is due to blood velocity and resistivity changes (blood volume changes) in order to estimate several hemodynamic parameters.

Keywords: ICG, Cardiovascular disease, Hemodynamic parameters, Automatic diagnosis and monitoring, Correct analysis.

Telemedicine system design and implementation

Hachemi Atroune², AbderrazakSebaa¹, KoceilaChefai², Lydia Abbas², NesrineHammouche²,
YaminaKhiati²

¹. LIMED Laboratory, Faculty of Exact Sciences, University of Bejaia, 06000 Bejaia, Algeria

² Department of Computer Science, University of Bejaia, 06000 Bejaia, Algeria

balzak.sebaa@gmail.com

Abstract:

Background: A modern *tele-consultation system* improves patients' monitoring and favors remote assistance in terms of facilitating the daily life to the patients. The aim of this work is to design and implement a modern remote consultation system.

Methods: To achieve this work, we identify the actors who interact with the system to be developed and the use cases relating to each actor. A class model is designed to derive the relational model and corresponding database. During implementation, we have used PHP language and MySQL database system.

Results: A *tele-consultation* framework is implemented. The users (patients and doctors) must register then authenticate in order to use the system. The latter allows them audio and video conversation between them.

Conclusion: We have given in this study how to design and implement a telemedicine system which will improve health care, ensure continuity of home care, prevent complications and thus limit hospitalizations and limit medical travel.

Keywords: Telemedicine, *Tele-consultation*, Healthcare, Medical remote system

References

- 1) Sebaa, A., Nouicer, A., Tari, A., Tarik, R., & Abdellah, O. (2017) Decision support system for health care resources allocation. *Electronic physician*, 9(6), 4661.
- 2) World Health Organization. World Health Statistics (2016) In World Health Statistics. 2016
- 3) Solutions médicales, La télémédecine, définition et mise en œuvre. <http://solutionsmedicales.fr/>. 2012.
- 4) Szlenk, M. (2006, May) Formal semantics and reasoning about uml class diagram. In *Dependability of Computer Systems, 2006. DepCos-RELCOMEX'06. International Conference on* (pp. 51-59). IEEE.
- 5) Paré, G., Jaana, M., & Sicotte, C. (2007) Systematic review of home telemonitoring for chronic diseases: the evidence base. *Journal of the American Medical Informatics Association*, 14(3), 269-277
- 6) Roine, R., Ohinmaa, A., & Hailey, D. (2001) Assessing telemedicine: a systematic review of the literature. *Canadian Medical Association Journal*, 165(6), 765-771.
- 7) Kvedar, J., Coye, M. J., & Everett, W. (2014) Connected health: a review of technologies and strategies to improve patient care with telemedicine and telehealth. *Health Affairs*, 33(2), 194-199.
- 8) OUDJOUDI, I. (2017) Plateforme télémédecine au service des populations enclavées en Algérie. Deuxièmes Journées Internationales du centre anti cancer Annaba, 07 et 08 Janvier 2017

A new approach for breast abnormality detection based on thermography

Chebbah Nabil Karim¹·Ouslim Mohamed²·TemmarRyad³

¹ PhD student, LMSE laboratory, Department of Electronics, Faculty of Electrical Engineering, University of Science and Technology of Oran (USTO), Oran, Algeria

² Professor, LMSE laboratory, Department of Electronics, Faculty of Electrical Engineering, University of Science and Technology of Oran (USTO), Oran, Algeria

³ PhD student, LMSE laboratory, Department of Electronics, Faculty of Electrical Engineering, University of Science and Technology of Oran (USTO), Oran, Algeria

chebbah.nabilkarim@gmail.com

Abstract

Background: Breast cancer is one of the most common women cancers in the world. In this paper, a new approach based on thermography for the early detection of breast abnormality is proposed.

Methods: The study involved 80 breast thermograms collected from the PROENG public database which consists of 50 healthy breasts and 30 with some findings. Image processing techniques such as segmentation, texture analysis and mathematical morphology were used to train a support vector machine (SVM) classifier for automatic detection of breast abnormality.

Results: After conducting several tests, we obtained very interesting and motivating results. Indeed, our method showed a high performance in terms of sensitivity of 93.3%, a specificity of 90% and an accuracy of 91.25%.

Conclusion: The final results let us conclude that infrared thermography with the help of an adequate automatic classification algorithm can be a valuable and reliable complementary tool for radiologist in detecting breast cancer and thereby helping to reduce mortality rates.

Keywords: Breast cancer, Thermography, Image processing, SVM, CAD system.

Feature extraction and segmentation of medical images

Tinhinane Mehdi¹, AsmaBoudrioua¹, AbdelouhabAloui¹

¹. Medical Laboratory (LIMED), Abderrahmane Mira University, Béjaia, Algeria.

hinanemehdi20@gmail.com

asma-boudrioua@outlook.fr

alouiabdel@gmail.com

Abstract:

Background: Developing a computer aided diagnosis system (CAD) is an extremely challenging task. One of the major goals of CAD is to help the radiologist to make good decisions by detecting and analyzing characteristics of benign and malignant lesions. In this context, we present accurate and automatic method that, detect and extract malignancy descriptors of breast and meningioma brain tumor.

Methods: We applied an algorithm that uses enhancement image based on homomorphic filtering and adaptive histogram equalization technique. This work was proposed by Zhang Chaofu et al. [1]. A region of interest is determinate using K means clustering. And then, we employed basically wavelet transform to extract pertinent features for meningioma tumor, geometric and texture characteristics for breast tumor in order to classify malignancy lesion.

Results: the segmentation result has been shown in this paper showing the well segmented masses, as well as the extracted set of characteristics has been illustrated in a vector .

Conclusion: A features extraction and segmentation, of mass cancer and meningioma brain Tumor images, is presented in this paper. Future work should focus on extraction of pertinent information witch characterize the malignancy. In order to increase the classification accuracy, we plan to explore a large data set of real images. Then, to evaluate performance of our method, we will compare the recent work proposed in literature.

Keywords: CAD; breast tumor; meningioma brain tumor; feature extraction; segmentation.

References :

[1] Zhang Chaofu, MA Li-ni, Jing Lu-na, Mixed Frequency domain and spatial of enhancement algorithm for infrared image, IEEE international Conference on Fuzzy Systems and Knowledge Discovery, FSKD, 2012, pp:2706-2710.

Segmentation Method of Skin MRI 3D High Resolution in vivo

RachidaZegour¹,Ahror Belaid², DouraiedBen salem^{3,4}

¹.Ph.D student at Medical Computing Laboratory (LIMED), Faculty of Exact Sciences,University of Abderrahmane Mira of Bejaia, Algeria.

². Assistant professorat Medical Computing Laboratory (LIMED), Faculty of Exact Sciences,University of Abderrahmane Mira of Bejaia, Algeria.

³.Professor at D INSERM UMR 1101 Laboratory of Medical Information Processing (LaTIM), 5 avenue Foch, 29200 Brest, France.

⁴.ProfessoratNeuroradiologyDepartment, CHRU la cavaleblanche, boulevard Tanguy-Prigent, 29609 Brest, France.

zegourr@gmail.com,ahror.belaid@univ-bejaia.dz,douraied.bensalem@chu-brest.fr

Abstract:

Background: In recent years, *Magnetic Resonance Imaging (MRI)* is used in clinical application as non-invasive medical modality; it is rarely used to study the anatomy physiological, and biochemical of the skin, in spite of its very attractive modality for skin imaging. It makes an ideal imaging modality of unique soft tissue contrast to study the skin water content and to differentiate between the different skin layers. However *MRI* provides a big data with high quality. The analysis of these data requires computerized methods to help clinicians and to improve disease of diagnosis. Several image processing method have been extensively used to assist doctors in qualitative diagnosis, segmentation is one of the most methods used in medical image processing for many applications in order to understand medical data and extract useful information. The aim of this study was to use the segmentation method to measure the hydration of skin using *MRI* modality.

Methods: We will classify segmentation approaches for MRI data into three basics classes: Edge based segmentation; Region based segmentation, and Thresholding segmentation. Then we will briefly describe Fuzzy C-means Clustering method, which is used to classify our study's population represented by a sample of thirty-five (35) healthy volunteers.

Results: We have measured the hydration of the feet as a result of the FCM segmentation method, where the 35 healthy volunteers were scanned by MRI machine before applying moisturizer and one hour after.

Our study showed that FCM is anefficient Algorithm used for medical images, because of its fuzzy nature, also it gives images segmentation results with different classes of skin before and after the application of moisturizer topic.

Conclusion: MRI is an attractive modality to study the skin water content; it makes an ideal observation of the different skin layers in vivo with three dimensions. However, the segmentation of MRI data by FCM clustering is a computerized method to help clinicians in order to measure skin hydration.

Keywords: MRI High Resolution, segmentation, hydration, FCM.

Automatic Human Sperm Concentration in microscopic videos

Karima Boumaza¹, Abdelhamid Loukil¹, Kaouthar Aarizou¹

¹LARESI laboratory, Department of Electronics, Faculty of Electrical Engineering,
University of Science and
Technology Oran, Oran, Algeria.
karima.boumaza@univ-usto.dz

Abstract:

Background: Human sperm cell counting analysis is of significant interest to biologists studying sperm function and to medical practitioners evaluating male infertility. Currently the analysis of this assessment is done manually by looking at the sperm samples through a phase-contrast microscope using expert knowledge to do a subjective judgement of the quality. So an automatic evaluation of this assessment is required in order to eliminate the subjective and error prone of the manual semen analysis and to avoid inter and intra-laboratory.

Methods: In this paper we introduce a technique for human sperm concentration. Its principle is based on the execution of three steps: The first step is unavoidable. It concerns the pretreatment of the human sperm microscopic videos which consists of a conversion of the RGB color space into the YCbCr space, the “Gaussian filtering” and the “discrete wavelet filtering”. The second step is devoted to the segmentation of the image into two classes: spermatozoas and the background. To achieve this, we used an edge detection technique “Sobel Contour detector”. The third step is to separate true sperm from false ones. It uses a machine learning technique of type decision trees that consist on two classes classification based on invariant characteristics that are the dimensions of the bounding ellipse of the spermatozoid head as well as its surface.

Results: To test the robustness of our system, we compared our results with those performed manually by andrologists. After results analysis, we can conclude that our system brings a real improvement of precision as well as treatment time which make it might be useful for groups who intend to design new CASA systems.

Conclusion: In this study, we designed and implemented a system for automatic concentration assessment based on machine learning method and image processing techniques.

Keywords: Decision Trees, Discrete Wavelet Transformation, Sobel Filter, Human Sperm.

References

BOUMAZA, Karima, LOUKIL, Abdelhamid, et AARIZOU, Kaouthar. Computer Aided Human Sperm Motility Detection. IEEE International Conference on Automatic control, Telecommunication and Signals, 2017.

Novel design of optical sensor based on two-dimensional photonic crystals for the detection of volatile organic compounds that can infect human health

Mehdi Ghoumazi^{1,2}, Abdessalam Hocini¹, Messaoud Hameurlain², Mokhtar Boudaa²
Ph.D Studentin¹ Laboratoire d'Analyse des signaux et Systèmes, Département d'Electronique,
faculté de technologie, Université Mohamed boudiaf de M'Sila, Algeria.
Researcher in² Unité de Recherche en Optique et Photonique (UROP-Sétif), Centre de
Développement des Technologies Avancées (CDTA), Algérie.
g_mehd@yahoo.fr

Abstract:

Background: In a recent research, optical sensors have a very important interest motivated by the increasing need for specific sensors and that allows for routine and effective measurements in several fields and analysis such as, safety, environment, and human health. Among its optical sensors are photonic crystal sensors which are characterized by high sensitivity and biocompatibility. The variations inside and around the photonic crystal can inform about the detection method by measuring the wavelength, the band gap and the output power...etc. Through defects created in photonic crystals such as missing rows of holes or rods, light is guided through and the goal is to achieve a very high sensitivity and spatially selective to changing superior bulk devices. In this paper, we model a new structure of an optical channel drop filter based on two dimensional photonic crystals to detect volatile organic compounds that can infect human health.

Objective: Detect the variation of the refractive index by fixing the radius (r) at 99.37nm and the lattice constant (a) at 523nm for various volatile organic compounds such as H₂CO, CH₂Cl₂, and C₂Cl₄ with refractive indexes that are: 1.3746, 1.421 and 1.503 respectively in the optical sensor based on photonic crystals for reasons related to the protection of human health.

Methods: The structure is made of square lattice silicon rods immersed in air. The dielectric constant of silicon and air is 11.9716 and 1 respectively. First, we created a cross shape resonator and designed an optical channel drop filter in the heart of the structure; our method is based on plane wave expansion method (PWE) by using MATLAB software and finite element method (F.E.M) with COMSOL software.

Results: the results obtained are as follows : TM and TE bands diagram of the Photonic crystal in square lattice of Silicon rods in Air, The schematic diagram of the filter, distribution of the refractive index in the proposed structure, mesh of the structure, the propagation and transmission for different refractive index such as methanal (H₂CO), Dichloromethane (CH₂Cl₂) and perchloroethylene (C₂Cl₄).

Conclusion: In this article, we have been able to simulate, analyze and control our proposed structure with MATLAB and COMSOL software based on the finite element method. The results show that for the three volatile organic compounds, the variation of the signal is due to the wavelength of the resonance which is related to the refractive index (n) and this can be seen by the small $\Delta\lambda$ between three volatile organic compounds, which is 0.4 between (H₂CO, C₂Cl₄) and 2.9 nm between (CH₂Cl₂, H₂CO). Thanks to this change, this structure can be used as a sensor for the detection of toxic organic pollutants that can infect human health.

Keywords: Crystal photonic, finite element method, volatile organic compounds, ring resonator, human health

Synthesis New modifiedsCyclodextrines as pharmaceuticals vectores

Assia Keniche^{1,2}, Malti Ibtissem², Si Said Mohammed El AmineJoseph Kajima Mulengi³.

¹PhD of Bioorganic and therapeutic chemistry, Maghnia Center University, Tlemcen, Algeria.

² Laboratory of Organic Chemistry Natural Products and Analysis University of Tlemcen, Algeria.

³Faculté des sciences, University of Tlemcen, Algeria.

e-mail: keniche_assia@yahoo.fr

Abstract:

Background: The aim of this study is the synthesis of new modifiedsCyclodextrins (CDs), for study of inclusion complex of drug with CD to improve water solubility.

Methods: In this study, the formulation of bioactive molecules (baclofene[®], synthesis aziridine and active propolis) with amphiphiliccyclodextrin (β -CD-amph) was prepared from native β -cyclodextrin (β -CD) via the simple co-precipitation method at university of Tlemcen (2016).

Results: It was of interest to find out a model of molecules derivative that would be sufficiently water-stable and form a stable complex with (β -CD-amph) in aqueous medium, so that it could be used as a reference in future formulations or vectorization work. mong the nanoformulation, NMR studies of the inclusion complex of this derivative with b-cyclodextrin provided useful parameters related to the stoichiometry of the complex and the association constant K_a .

Conclusion: The geometry of the complex was assessed by 2D-ROESY experiments, suggesting a deep insertion of the guest into the cavity of (β -CD-amph).

Keyword: Cyclodextrine, bioactive molecules, baclofene[®]

Synthesis of New inhibitors of theFibrillogenesisA β 42 :Alzheimer'sDisease

Assia Keniche^{1,2}, katiaouled Taleb², Joseph Kajima Mulengi³.

¹PhD of Bioorganic and therapeutic chemistry, Maghnia Center University, Tlemcen, Algeria.

² Laboratory of Organic Chemistry Natural Products and Analysis University of Tlemcen, Algeria.

³Faculté des sciences, University of Tlemcen, Algeria.

e-mail: keniche_assia@yahoo.fr

Abstract:

Background: The Alzheimer's disease (AD) is a devastating neurodegenerative disorder and the most common cause of dementia. The pathological hallmarks of AD are the presence of neurofibrillary tangles and amyloid deposits in the brain of the patient, as already defined by Alois Alzheimer in 1907 . The aim of our study is to inhibit the formation the folding of amyloid protein by new synthesis of β -sheet breaker peptides.

Methods: Our approach consist to develop β -sheet breaker peptides as a novel strategy to inhibit and reverse amyloidosis in AD. The synthesis was down by peptid coupling method.

Results: Several β -sheet breaker peptides have been designed based on the hypothesis that amyloid deposition could be inhibited by short synthetic peptides partially homologous to the A β region undergoing conformational changes to give rise to the amyloidogenic A β

intermediate and containing residues disrupting as aziridine and CD for the β -sheet formation university Tlemcen 2017..

Conclusion: At present, there is no ideal drug for the treatment of AD, and the searches for AD drugs remain an urgent issue in the pharmaceutical community. Due to its complex pathogenesis, a single target drug cannot cure this disease fundamentally. Dual or multiple target drugs involved in two or more aspects of AD pathogenesis may generate a synergistic effect and ultimately achieve an ideal therapeutic effect.

Keyword: Alzheimer, Fibrillogenesis A β 42, β -sheet.

Design of Novel Therapeutic Strategies for Alcohol addiction

Assia Keniche^{1,2}, Si Said Mohammed El Amine², Joseph Kajima Mulengi³, Ibtissem Louar⁴.

¹PhD of Bioorganic and therapeutic chemistry, Maghnia Center University, Tlemcen, Algeria.

²Laboratory of Organic Chemistry Natural Products and Analysis University of Tlemcen, Algeria.

³Faculté des sciences, University of Tlemcen, Algeria.

⁴Université des Frères Mentouri Constantine1, Constantine, 25 000, Algeria.

e-mail: keniche_assia@yahoo.fr

Abstract:

Background: Baclofen® is an FDA-approved GABAB agonist used for the treatment of spasticity since the early seventies. The aim of this study to synthesis a new analog of BF.

Methods: The main problem of baclofen® that is administered as a racemate. However, in our work we synthesis the R-(–) enantiomer. In our study, we use stereoselective method for the synthesis of peptid analog and the study of their inclusion complex with CD, university Tlemcen 2017.

Results For evaluation of anti-addiction activity, we have developed new model in vivo, and the result are that our synthesized baclofen® analogues, showed an anxiolytic effect. Regarding the toxicity, our results showed that our analogues have less toxic effect than baclofen, it reduces the activity of TGO enzymes, TGP. From a histological point of view has no effect on the liver structure in addition to having a protective effect against lesions liverworts induced by alcohol.

Conclusion: Our conclusion is an Open Question : If baclofen® can cure any form of addiction as smoking, alcoholism and other addictions to addictive substances. If it is beneficial effect is already proven, approved, and used as anticraving agent in several countries in the world. Why until now the Algerian health community does not use baclofen® in treatment of several addiction?

Keyword: Alcohol addiction, Baclofen®.

Isolation and in silico characterization of a leishmanicidal disintegrin from *Cerastes cerastes* venom

Dihia Allane¹, Habiba Oussedik-Oumehdi¹, Zoubir Harrat², Sylvie Michelland³, Michel Seve³ and Fatima Laraba-Djebari¹

¹USTHB, Faculté des Sciences Biologiques, Laboratoire de Biologie Cellulaire et Moléculaire, BP 32, El –Alia Bab Ezzouar, 16111, Alger, Algérie.

²Institut Pasteur d'Algérie, Service d'Eco-Epidémiologie Parasitaire, Dely Ibrahim 16 047 Alger, Algérie

³CHUGrenoble Alpes, Institut de Biologie et de Pathologie, PrometheeProteomic Platform, Grenoble, France

Adresse mail :
flaraba@hotmail.com, flaraba@usthb.dz, habibaoussedik_27@hotmail.com, houssedik@usthb.dz

Abstract

Background: Leishmaniasis represents a serious public health problem in Algeria. The parasite, in the promastigote form, upon transfer by the infected vector to the vertebrate host, invades mononuclear macrophages and causes substantial human morbidity and mortality. Investigating new antimicrobial and antiparasitic components from Viperidae venoms represents an alternative therapeutic strategy for leishmaniasis treatment. In the present study, we report the characterization of a disintegrin, isolated from *Cerastes cerastes* venom, exhibiting antiparasitic activity on *Leishmania infantum* promastigotes.

Methods: The active biomolecule, referred to Disintegrin_Cc, was isolated by RP-HPLC chromatography. The *in vitro* antiparasitic activity of this molecule was evaluated on *Leishmania infantum* promastigotes. The isolated disintegrin was analyzed by SDS-PAGE for homogeneity and molecular weight determination and then subjected to MALDI-TOF MS/MS analysis. 3D structure was predicted *in silico* using SWISS-Model.

Results: Isolated Disintegrin_Cc induced deep morphological alterations on the parasites and a strong anti-leishmanial activity estimated to 84.75% of mortality. SDS-PAGE analysis indicated that this disintegrin was homogenous. This dimeric disintegrin of 14,193.97 Da contains an RGD domain and four intramolecular disulfide bridges. This biomolecule presents a high percentage of identity with other related snake disintegrins. Predicted 3D structure indicated that this peptide shares partial homology with well-known active antimicrobial peptides.

Conclusion: This study demonstrated the leishmanicidal activity of Disintegrin_Cc. This molecule may be useful to design a new therapy against leishmaniasis.

Keyword: *Cerastes cerastes*, Disintegrin, *Leishmania*, Venom.

Molecular docking of Cc2-PLA₂ a phospholipase A₂-derived from *Cerastes cerastes* venom with its inhibitors

Chérifi Fatah, Saoud Samah and Laraba-Djebari Fatima*

USTHB, Faculty of Biological Sciences; Laboratory of Cellular and Molecular Biology, BP 32 El-Alia, Bab Ezzouar, Algiers, Algeria.

*Corresponding author:

Tel.: +21321336076; Fax: +21321336077.

flaraba@hotmail.com. flaraba@usthb.dz

ABSTRACT

The current study reported a structure-based molecular docking of Cc₂-PLA₂, a phospholipase A₂ purified from *Cerastes cerastes* venom by three chromatographic steps. Its molecular weight was equal to 13,534.16 Da and its sequence identified by proteomic analysis consists of 120 amino acid residues. Structurally, when modeled by homology Cc₂-PLA₂ 3D structure appeared organized into 2 β -strands (11%), 3 α -helices (42%) and 11% disordered structure. To explore their inhibitory effect against Cc₂-PLA₂ enzymatic activity, curcumin and its analogs, derived from chemical modification of curcumin, were submitted to a molecular docking study. Our results show that all of them curcumin, tetrahydrocurcumin and dihydrocurcumin interact with Cc₂-PLA₂ by a hydrogen bond established with His⁴⁷. Moreover, hexahydrocurcumin targeted the residue Asp⁴⁸ of Cc₂-PLA₂.

Besides of this, among all compounds the most potent complexes was established with hexahydrocurcumine and tetrahydrocurcumine as they show the most negative energies of interaction. This result shows that chemical modification of curcumin promoted its affinity to Cc₂-PLA₂ and therefore potentiates the inhibitory effect. His 47 and Asp 48 being involved in the catalytic loop of Cc₂-PLA₂ thus reinforce the obtained results and confirm the inhibitory effect of the studied compounds against the catalytic activity of our enzyme on its specific substrates. The current study opens perspectives for the design of new snake venom-phospholipase A₂ inhibitors and the improvement of envenomation therapy.

Keyword: Phospholipase A2, 3D modeling, Curcumin, Inhibition, Docking.

***In vitro and in silico* exploration of the hemagglutinating activity of an antithrombotic C- type lectin isolated from *Cerastes cerastes* venom**

SAOUD Samah, CHERIFI Fatah and LARABA-DJEBARI Fatima*

USTHB, Faculty of Biological Sciences; Laboratory of Cellular and Molecular Biology, BP 32 El-Alia, Bab Ezzouar, Algiers, Algeria.

*Corresponding author:

Tel.: +21321336076; Fax: +21321336077.

flaraba@hotmail.com, flaraba@usthb.dz

Abstract

In the present work, we report a structure-function characterization of the hemagglutinating activity of a C-type lectin purified from *Cerastes cerastes* venom. This molecule was shown to be a 34,597.62 Da polypeptide with 160 amino acids sequence. Cc-Lec 3D structure is organized into a homodimer cross-linked with a disulfide bridge and was predicted to have three alpha helices and seven beta strands for each monomer. Cc-Lec was able to agglutinate a wide spectrum of native erythrocytes among them human group O, A and B erythrocytes. Hemagglutination inhibition studies using bivalent ions and metal chelators EDTA, EGTA and 1.10-phenanthroline showed the requirement of Ca²⁺ to each functions of Cc-Lec. Moreover, its hemagglutinating activity was not abolished at high temperatures and stable in basic pH range. The agglutination inhibitory assay in the presence of many carbohydrates revealed that this activity was high selectively inhibited by D-Lactose. These experimental data were in agreement with molecular docking studies. Hence, the determinant of human group B erythrocytes is linked to Cc-Lec by two hydrogen bonds; the first of them was established between fucose and Asn⁹⁸, while the second was between galactose and Asn¹²¹. Cc-Lec interaction with the determinant of human group A erythrocytes was also through two hydrogen bonds linking determinant galactose with Cc-Lec residues Gly¹¹⁷ and Asn¹¹⁴. The current study contributes to further characterization of the newly purified lectin especially as it showed promising biological activities which promote its use as a pharmacological tool in thrombosis diagnostic and therapy.

Keywords: *Cerastes cerastes*, C-Type Lectin, Hemagglutination, Human erythrocytes, Molecular docking.

A prospective study of acute poisonings during the period (2009-2015) in Cheguevara hospital wilaya of Mostaganem.

Oueld Henna Chahrazed¹, Bouabdelli Salah edin², Bouabdelli Fatma³,
Missounfatiha³, Djebli Noureddine³.

¹Department of biology, Faculty of nature and health, University of Abd Hamid Ibn Badis, Mostaganem, Algeria.

²Laboratory of phytotherapy Apipharmacognosy (LPAP). University of Abd Hamid Ibn Badis, Mostaganem, Algeria

Summary:

The urgencies of our hospitals record a poisonings related on the bad use (or not) of products or foods use by the individual. These intoxications result in symptoms which vary according to the nature of the poisons. The symptoms can be neurological, cardiovascular, respiratory, digestive and renal. Consequently of this intoxication is able to a die.

Our work with objective to improve quantity of the information collected by retrospective study related to the intoxications on the level of Mostaganem infectious and infection of and to evaluate the risks and to define the actions to be undertaken to prevent the serious intoxication in order to better consider the prevention which remains the best therapeutic weapon.

Our study shows us that the percentage of food poisoning it's high, the medicaments it's weak but she has very a lot of consequence.

Key word: intoxication, medicaments, inquiry, stomach pump, caustic product.

Evaluation of the anti-inflammatory activity of bioglucumin: mixture of aqueous extract of two medicinal plants: (Hericiumerinaceus and Curcumin) "In vivo experimental study in mice (NMRI)".

Rezkallahzeyneb¹, Amari Nesrine², Djebli Nouredine³.

¹Depertement of biology, Faculty of nature and health, University of Abd Hamid IbnBadis
, Mostaganem, Algeria.

²Laboratory of phytotherapy Apipharmacognosy (LPAP). University of Abd Hamid IbnBadis
, Mostaganem, Algeria

zinebrezkallah8@gmail.com, nesrineamari@yahoo.fr

Abstract

The inflammation is process used to eliminate the pathogen and repair tissue damage. Many plants and herbs have been shown to exhibit potent antiinflammatory effects. The present study aims to study the anti-inflammatory effects of a mixture of two medicinal plants: Mushroom and curcumin (bioglucumine). The experiments were performed on the model of acute edema of the paw induced by carrageenan mice. The model was tested by aqueous extracts of bioglucumin at dose 100 mg / kg administered orally. Gavage was performed one hour before induction of acute inflammation with 1% carrageenan. The results obtained were compared with those of Diclofenac and those of physiological control. After oral administration of physiological saline, carrageenan significantly increased mouse paw volume by $71.97 \pm 15.06\%$, $51.06 \pm 4.46\%$, and $33.92 \pm 19.46\%$, respectively. 1h, 3h and 6h. Administration of Diclofenac (50 mg / kg, oral) significantly prevented the increase in mouse paw volume of $64.77 \pm 26.88\%$; $15.29 \pm 8.37\%$; 0.51 ± 0.59 respectively at 1h, 3h and 6h after administration of carrageenan. Oral administration of the aqueous extract of bioglucumin at the dose of 100 mg / kg $38.35 \pm 15.67\%$; $15.32 \pm 5.08\%$; $0 \pm 0\%$ The histological study of sections treated with Diclofenac and aqueous extract of bioglucumin (100 mg / kg) confirm that these treatments have anti-inflammatory activity. In addition, the inflammatory infiltrate disappears almost completely. The results of this study highlight the pharmacological bases of bioglucumin in traditional medicine to prevent inflammatory processes.

Keyword: bioglucumin, Mushroom, curcumin, anti-inflammatory, edema, aqueous extract.

Study of Antibacterial Activity of Pistacialentiscus essential Oil

DRIS Ibrahim¹ ; BEKADA Ahmed Mohamed Ali¹ ; ATTALA Nabila²; AIT SAADA Djamel¹

¹Laboratory of Biology of plants , University AbdelhamidIbnBadis of Mostaganem, Algeria

²Laboratory ofPharmacognosisApiPhytotherapy, University AbdelhamidIbnBadis of Mostaganem, Algeria
drisibrahime@gmail.com

Abstract:

The botanic genre *Pistacia* groups around fifteen species of shrubs that belong to the *Anacardiaceae*'s family; which origin is Asian or Mediterranean.

Pistacialentiscus is an abundant specie of the *Pistacia* genre encountered in the forest region of Ouarsenis mount (Northwest of Algeria), exactly in the national parc of Thniet El Had in the Wilaya of Tissemsilt

The spicie's essential oils could be explored to test their anti-microbial activity, especially against some bacteria that cause alimentary intoxications.

in the Laboratory of Biology of plants , University AbdelhamidIbnBadis of Mostaganem, Algeria during 2017 ;The aim of the current study was to evaluate the anti-bacterial activity of the essential oil of *Pistacialentiscus* against pathogen bacteria using the disk diffusion methods; The antibiogram is made following the gliosis-environment diffusion method and makes it possible to determinate bacteria's' sensibility to antibiotics

From a young culture (18 to 24 hours), a bacterial suspension is prepared and well-homogenized after wards. The opacity must be equivalent to 0,5McF (McFarland), the O.D being between 0.08 and 0.1 read at 625nm

The results revealed that the essential oil exhibited strong levels of antibacterial activity against the tested microorganism regarding the MIC values.*Salmonella* had a great sensitivity to the essential oil.the biggest inhibition zones have been obtained for *Salmonella sp*, *Acinetobacter.sp*, *Satphylococcus aureus* and *Bacillus sp*(23,20,19 and 19 mm, respectively).So, we considered that those microorganisms were more sensitive to that oil. The same way ,*Pseudomonas aergenosa* been judged to be more sensitive to the oil than *prot* (16 and 12 mm, respectively; Based on the findings of the present study, novel antibacterial agents could be developed, and the use of *Pistacialentiscus* should be promoted in the traditional treatment.

Keywords : *Pistacialentiscus*, essential oils, antimicrobial power, pathogen bacteria.

Cardiac function disruption developped in an envenomed model: Renin involvement

Amina Sifi, Sonia Adi-Bessalem and Fatima Laraba-Djebari

¹USTHB, Faculty of Biological Sciences, Laboratory of Cellular and Molecular Biology, BP 32, El-Alia Bab Ezzouar, 16111 Algiers, Algeria.
flaraba@hotmail.com

Abstract

Background: Scorpion envenoming causes autonomic storm resulting in a transient hypertension followed by hypotension, cardiovascular disturbances and numerous other clinical manifestations that could be due to sudden increase of catecholamines but also of glucagon, cortisol and either AngII, the effector peptide of the renin angiotensin system (RAS). RAS activation is a key contributor in the progression of heart failure. Blockade of RAS activation have been showed major beneficial impacts on morbidity and mortality in this setting.

In this study, we aimed to investigate renin involvement in the pathophysiology induced by scorpion venom on the cardiac tissue of envenomed rats, through the inhibition of its production.

Material: For this issue, the hemodynamic variation (blood pressure, heart rate and ECG) and the cardiac specific marker, Troponin I were evaluated. Moreover, inflammation was assessed by the evaluation of inflammatory cell infiltration (MPO and EPO activities) and the oxidative stress markers (NO, MDA, CAT, GSH).

Results: Obtained results showed that the *Aah* venom induced severe inflammatory disorders characterized by a significant elevation of blood pressure and ECG perturbations, correlated with the elevation of the Troponin I in sera till 24 hours following the envenomation. A severe inflammatory cell infiltration with the imbalance of the redox status, marked by increased NO and MDA and decreased GSH levels and CAT activity were also observed.

Inhibition of renin prevented effectively the hemodynamic and troponin I disorders. The inflammatory response was significantly decreased as revealed by the reduced influx of inflammatory cells, as well as the oxydative stress over expression.

Conclusion: The experimental data confirmed the pivotal role of renin in the generation of cardiovascular damages in envenomed experimental models.

Keyword: envenomation, inflammation, heart, AngII, renin.

References

- [1] S. Adi-Bessalem, D. Hammoudi-Triki, F. Laraba-Djebari, Scorpion Venom Interactions with the Immune System, Scorpion Venoms, Springer 2015, pp. 87-107.
- [2] V.L. Petricevich, Scorpion venom and the inflammatory response, Mediators of inflammation 2010 (2010).
- [3] A. Sifi, S. Adi-Bessalem, F. Laraba-Djebari, Role of angiotensin II and angiotensin type-1 receptor in scorpion venom-induced cardiac and aortic tissue inflammation, Experimental and molecular pathology 102(1) (2017) 32-40.
- [4] H. Krum, A. Maggioni, Renin inhibitors in chronic heart failure: the Aliskiren Observation of Heart Failure Treatment study in context, Clinical cardiology 33(9) (2010) 536-541.

Cleavage of Type IV Collagen as a Key Step in the Microvasculature Damage induced by two hemorrhagic metalloproteinases isolated from *Cerastes cerastes* Venom

Boukhalfa-Abib H., Tachoua W., Laraba-Djebari F.

USTHB, Faculty of Biological Sciences, Laboratory of Cellular and Molecular Biology, BP 32, El-Alia Bab Ezzouar, 16111, Algiers, Algeria.

Abstract

Background: Snakes *Viperidae* family induces hemorrhage which is a typical consequence of envenomation. Microvasculature damage is the main event caused by Snake Venom Metalloproteinases (SVMPs). However, the precise mechanism by which SVMPs disrupt the microvasculature is right now unclear. *Cerastes cerastes* venom was fractionated by different chromatographic steps yielded two SVMPs hemorrhagic CcMP-II and Cc HSM-III causing a variety of local tissue damage.

Methods: In this study, we evaluated the effect of these hemorrhagic metalloproteinases on extracellular matrix components. Collagenase activity was also tested using type IV collagen (from human placenta, Sigma). Samples of CcMP-II (1, 2, 5, 10, 20 and 40 µg in 0.025 M CaCl₂) were incubated with type IV collagen in 0.05 M Tris-HCl, pH 7.8, for 24 h at 37°C. Hydroxyproline released during an incubation of 24 h incubation was detected by ninhydrin reagent after boiling for 20 min. N-propanol 50 % was added after cooling. Collagenase activity was expressed as absorbance increase at 600 nm (USTHB, Faculty of Biological Sciences, BP 32, El-Alia Bab Ezzouar, 16111, Algiers, Algeria in 2016). The histopathological changes induced by CcMP-II and Cc HSM-III were also analyzed after injection in mouse dorsal skin by subcutaneously route. Tissue samples were collected 2 h after injection. Notice abundant erythrocytes in the interstitium of muscle tissue injected with venom or purified molecules, whereas normal histological features are observed in control muscle injected with saline solution. Hematoxylin and eosin stain, magnification: 40x.

Results: Obtained results showed that both hemorrhagic SVMPs (CcMP-II and Cc HSM-III) interfere with the homeostatic system by degrading fibrinogen. Indeed, CcMP-II and Cc HSM-III hydrolyzed preferentially the A α -chain of fibrinogen in a time-dependent manner. Furthermore, the effect of CcMP-II and Cc HSM-III on extracellular matrix components mainly type IV collagen showed a complete degradation of this molecule (4.37 ± 0.15 nm/mg) within 30 minutes supporting by tissue damage of skin injected with CcMP-II and Cc HSM-III, revealing an extensive hemorrhage in the hypodermis and in skeletal muscle with a clear loosening of the bundles of collagen indicating a massive degradation of fibrillar collagen associated to an important leukocyte infiltration. The significance of the differences between the mean values of two experimental groups was assessed by the Student's *t*-test. Values of *p* lower than 0.01 were considered significant.

Conclusion: These results will contribute to better understand of the functional mechanisms of hemorrhagic effect and may be useful in the development of therapeutic strategies for snake bite accident.

Keywords: Snake venom; *Cerastes cerastes*; Type IV collagen; Microvasculature damage.

Role of the Histamine H3-Receptor in Hepatorenal Inflammatory Injuries Induced by Scorpion Venom

Megdad-Lamraoui A., Adi-Bessalem S., Laraba-Djebari F.

USTHB, Faculty of Biological Sciences, Laboratory of Cellular and Molecular Biology, BP 32, El-Alia Bab Ezzouar, 16111 Algiers, Algeria

Abstract

Background: The activation of the inflammatory response and the release of pro-inflammatory mediators such as cytokines and vasoactive substances play an important role in the patho-physiology of scorpion envenomation. The mechanism of the hepato-renal inflammation response induced by scorpion venom has not yet been completely elucidated.

Methods: The aim of this study is to investigate the role of histamine H3-receptors in hepato-renal tissue inflammation and oxidative stress following experimental scorpion envenomation. Hepato-renal inflammation was assessed by colorimetric methods evaluating the index of increased vascular permeability, the myeloperoxidase and the eosinophil peroxidase activities markers of neutrophil and eosinophil cells in these tissues. Lipid peroxidation expressed as malondialdehyde level and glutathione were measured to assess the oxidative stress. This study is supported by histological analysis where the sections were stained with hematoxylin and eosine. This study was performed in the Laboratory of Cellular and Molecular Biology of the Biological Sciences Faculty at the University of Sciences and Technology Houari Boumediene (USTHB) in 2013.

Results: Envenomed mice displayed an installation of an inflammatory response marked by cell infiltration preceded by an increase of the hepatic (6.25 ± 0.57 / μ g of tissue, $P < 0.05$) and the renal (32.46 ± 1.12 / μ g tissue, $P < 0.001$) vascular permeability compared to controls (liver : 3.72 ± 1.70 / μ g of tissue; kidney: 9.78 ± 0.99 / μ g de tissue). Imbalanced redox status with decreased catalase and glutathione activities, and increased malondialdehyde level with alterations of hepato-renal tissues were observed. Pre-treatment of animals with histamine H3-receptor antagonist before venom injection, significantly decreased the vascular permeability ($P < 0.05$), edema formation and tissue recruitment of inflammatory cells. Lipid peroxidation products, glutathione and catalase activities were significantly reduced ($P < 0.05$). These disorders were accompanied by a reduction of anatomo-pathological alterations induced by the venom.

Conclusion: These results suggest that the histamine by acting on the H3 receptor is involved in the triggering of the inflammatory response and also in the alteration of the oxidant/antioxidant balance in the hepato-renal tissues caused by the venom.

Keywords: Hepato-renal inflammatory response, histamine H3 receptor, oxidative stress, scorpion venom.

Acute Pancreatitis Induced by *Androctonus Australis Hector* Venom: Inflammatory Response and tissue damages

Zahida Taïbi-Djennah¹, Fatima Laraba-Djebbari¹

USTHB, Faculty of Biological Sciences, Laboratory of Cellular and Molecular Biology ,
BP 32 El-Alia, Bab Ezzouar, 16111 Algiers, Algeria.
flaraba@hotmail.com

Abstract:

Background: Scorpion envenomation (SE) is a public health problem raging not only in Maghreb regions but also in the rest of the world. In Algeria, *Androctonus australis hector* (*Aah*) is responsible for serious and fatal accidents in humans. Complexity of biological changes and disturbances caused by scorpion venoms is multifactorial. Acute pancreatitis is an inflammatory disorder characterized by excessive recruitment of leukocytes and massive release of inflammatory mediators including TNF- α , IL-1 β , IL-6. Acinar cell injury in acute pancreatitis leads to a systemic inflammatory response syndrome and multiple organ dysfunctions. Thus multiple visceral dysfunctions observed after scorpion stings could be related to acute pancreatitis. In this study, we investigated the effects of *Aah* venom on pancreatic function and its consequences on inflammatory response and redox status.

Methods: NMRI mice were injected by the subcutaneous route with a sublethal dose of *Aah* venom. Inflammatory response and oxidative stress were assessed in pancreatic tissue homogenates.

Results: The obtained results revealed that *Aah* venom induced inflammatory response characterized by significant increase of microvascular permeability, Matrix Metalloproteinases, NF- κ B, Myeloperoxidase and Eosinophil Peroxidase activities in pancreatic tissue homogenates. It also induced severe alterations in pancreatic tissue associated with a significant increase in levels of nitric oxide, hydrogen peroxide and lipid peroxidation. Cytokine antagonists injected 30 min prior to *Aah* venom allowed a significant reduction of pathological biomarker of pancreatic function, inflammatory response and oxidative stress.

Conclusion: In conclusion, the *Aah* venom seems to provoke acute pancreatitis that contributes to systemic inflammatory response observed during SE. The pathophysiology of these events is complex; it seems to be mediated by the massive release of IL-6 and TNF- α .

Keywords: *Aah* venom, Acute pancreatitis, Inflammatory response, IL-6, TNF- α

Are the plants used in Algerian folk medicine effective?

Assessment of the antibacterial, anti-inflammatory and antioxidant effects of three plants used in Algerian folk medicine; *Olea europaea*, *Glycyrrhiza glabra* and *Ocimum basilicum*.

Elkolli Meriem, Elkolli Hayet

Department of microbiology, FSNV of Sétif 1 university Algeria
elkolli@yahoo.fr

Abstract

Algeria has a very large vegetation biodiversity. Algerians use herbs in phytotherapy because of their easy, safe and inexpensive use. In addition to the own flora, there were always plants imported, mostly, from Asia.

The present investigation was realized in the Laboratory of *Valorization of Natural and Biological Resources* at the University of Sétif 1 (Algeria) from January to May 2016. the *in vitro* anti-bacterial effects of Olive and basil leaves and Licorice root aqueous extracts (AE)

were evaluated against *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853 and *Staphylococcus aureus* ATCC 25923 by the disc diffusion assay (aromatogram). Briefly, the Petridishes were seeded by swabbing areas, and then pre-incubated for 1/2 h at room temperature, allowing the complete diffusion of the AE and then incubated at 37°C for 24 h. The antimicrobial activity was determined by measuring of inhibition zone diameters (mm). Gentamicin was used as a positive control for bacterial strains.

The *in vitro* anti-inflammatory activity was realized by the estimation of the protein denaturation of the BSA in high temperature. BSA is added to the plant extract with different concentrations mixture, followed by heating at 51°C. The resulting solution is cooled down to room temperature and absorbance is recorded at 660 nm. Acetyl salicylic acid is taken as a positive control. The antioxidative test was done by the DPPH method. The DPPH radical absorbs at 517 nm and the antioxidant activity can be determined by recording the decrease of the absorbance of the extracts. 50 µl of each different AE dilution were mixed with 1250 µl of a methanol solution of DPPH (0.004 %). The absorbance was measured after 30 min of incubation in the dark. Synthetic antioxidant, BHT was used as positive control.

OLE and LRE were active on both *E. coli* (13.5, 10 mm) and *S. aureus* (14, 12 mm) at 200 mg/ml. While the BLE was inactive against all strains. The percentage of BSA denaturation was concentration-dependent by both BLE and LRE and the maximum inhibition was recorded by the OLE at 250 µg/ml, it was slightly different from BLE at $P \leq 0.05$, but not significantly different from LRE. The three extracts showed good values of IC_{50} with 0.65, 4.98 and 0.91 mg/ml OLE, LRE and BLE respectively, but they were inferior to that of BHT. These results corroborate with the traditional use, but remains to restore a system of pharmacological evaluation and legal control, including the dosage standards to avoid toxic doses.

Keywords: Folk phytotherapy, Olive leaves, Licorice, Basil, pharmacopoeia.

Activity antibacterienne of two plants of Cistaceae

Oueld Henna Chahrazed¹, Bouabdelli Salah edin², Bouabdelli Fatma³,
Missoun fatiha³, Djebli Noureddine³.

¹Departement of biology, Faculty of nature and health, University of Abd
Hamid Ibn Badis, Mostaganem, Algeria.

²Laboratory of phytotherapy Apipharmacognosy (LPAP). University of Abd
Hamid Ibn Badis, Mostaganem, Algeria
chahrazedpoupouna@gmail.com

Summary

In primary health care drugs pharmacopoeia by drug occupy an important place in the socio-cultural environment of the Maghreb pay, they are used in usual therapy.

The experimentation is carried out on the inhibiting effect of *Cistus monspeliensis* and *Helianthemum* sp are rough extracts on the growth of *Staphylococcus aureus*, *Pseudomonas* and *E. Coli*.

The *Cistus monspeliensis* and *Helianthemum* sp are rough extracts are diluted at some 10^{-1} ; 10^{-2} ; 10^{-3} ; 10^{-4} rates. The following measures and controls (Diameters of inhibition, test of growth, test of CMI and CBM) were tested on *Staphylococcus aureus*, *Pseudomonas* and *E. Coli*.

The largest diameter of zone of inhibition is notes to 100% of oil of cists, in the order of 28 mm and helianthus of 24 mm on average, the phenol extract of cists, *E. Coli* (12 mm); *Pseudomonas* (18 mm); *Staphylococcus aureus* (22 mm), and extract of helianthus, *E. Coli* (17 mm); *Pseudomonas* (20 mm); *Staphylococcus aureus* (20 mm), in the same way, the best

results of the rates of inhibitions are obtained at the solutions of extractions prepare to 80 and 100%; respectively and diminution of growth at ($30 \cdot 10^5$ à 0 UFC/ml).

Lastly, the inhibiting minimal concentration and bactericidal minimal concentration are obtained at to solutions of extraction prepared to 80 and 100%; our extracts seem to exert a bactericidal effect on the germs studied.

Our results confirm that the plants *Cistus monspeliensis* and *Helianthemum* sp of the family Cistaceae have doses of polyphenols (Ciste = 11,603, Helianthème = 11,091%) and have a very important antibacterial activity vis-à-vis the strains responsible for nosocomial infections and an antioxidant activity *Helianthemum* sp ($R_f = 0.13, 0.75, 0.88, 0.94$), *Cistus monspeliensis* ($R_f = 0.1, 0.66, 0.75, 0.88, 0.96$) [methanolic extracts]. *Helianthemum* sp ($R_f = 0.09, 0.5, 0.72$), *Cistus monspeliensis* ($R_f = 0.09, 0.68, 0.89$) [chloroform extracts]

Keywords: antibacterienne, Cistaceae, drugs.

(Vapor + liquid) equilibria of binary mixtures containing ionic liquid with alcohols

Asma Khelassi-Sefaoui¹, Fabrice Mutelet², Ilham Mokbel^{3,4}, Jacques Jose³, Latifa Negadi¹

^a LATA2M, Laboratoire de Thermodynamique Appliquée et Modélisation Moléculaire, University of Tlemcen, Post Office Box 119, Tlemcen 13000, Algeria.

^b Laboratoire Réactions et Génie des Procédés (UMR 7274), Equipe Thermodynamique et Energie, Ecole Nationale Supérieure des Industries Chimiques, Université de Lorraine, 1 rue Grandville, 54000 Nancy, France.

^c UMR 5280, Institut des Sciences Analytiques -5, rue de la Doua – 69100 Villeurbanne, France.

^d Université de Saint Etienne, Jean Monnet, F-42023 Saint Etienne - Université de Lyon, F-42023 Saint Etienne, France.

Abstract

Economical and environmental aspects are the main motivation for research on energy efficient processes and the search for environment friendly materials for CO₂ capture. Currently, CO₂ capture is dominated by amine-based (e.g., monoethanolamine) technologies, which are very energy intensive and less attractive from an environmental point of view due to emissions of the used volatile solvent components. Ionic liquids have been proposed as a promising alternative to the conventional volatile solvents, because of their low volatility and other interesting properties.

This paper reports vapor-liquid equilibrium (VLE) measurements performed on binary systems of the ionic liquid 1-ethyl-3-methylimidazolium thiocyanate [EMIM][SCN] with methanol, ethanol, 1-propanol at pressures close to the atmospheric pressure using a static device at temperatures between 273 and 363 K. Experimental data were correlated by the PC-SAFT equation of state. The binary interaction parameters k_{ij} were optimized on experimental VLE data. The results obtained for the binary mixtures studied in this paper indicate that the PC-SAFT EoS can be used to represent systems containing ionic liquids.

Keywords: vapor-liquid equilibrium (VLE), ionic liquids, binary mixtures.

IWCPH'18: International Workshop on Cancer and Public Health 2018

Role of the Intestinal Microbiota in Noncommunicable Chronic Diseases and Potential Therapeutic Implications. Review 2018

Z. Sari

Clinique farabi – Annaba- ALGERIA

zoubirsari@hotmail.com

Abstract:

Noncommunicable Chronic Diseases (NCDs) are a real disaster in Algeria because their frequency and their worse functional and vital prognosis .

Metagenomic methods are used to better understand the intestinal microbiota (IM) and allows to study its influence in the genesis of NCDs by determining IM richness and composition disturbances during NCDs development.

Nutritional modulation, probiotics and prebiotics impact on IM composition and richness is a issue to consider for the future NCDs treatment and prevention in order to lighten their medico-social and financial care heaviness .

Keywords: Intestinal microbiota, Non communicable chronicdisease, Metagenomic, Nutrition, Pro/Prebiotics

Rare Diseases Problems in Algeria

Z. Sari¹, S. Rouabhia²

¹Clinique farabi – Annaba- ALGERIA

²InternalMedicine Service – CHU Batna – Algeria

zoubirsari@hotmail.com

Abstract:

In Algeria the diagnosis of rare diseases is regularly made as evidenced by the publications of the various medical societies. This work focuses on the difficulties of diagnosis, treatment and care encountered during the daily practice of internal medicine in Algeria.

Clinical cases:

- Profile 1: Syndromic grouping without precise diagnosis

This situation concerns a 24-year-old patient with moderate mental retardation, poorly labeled digestive disorders, skeletal disorders with abnormal walking. This unusual situation evokes the possibility of sequelae of fetal infection, a moderate form of genetic disease allowing to reach adulthood or purely digestive problems with nutritional consequences to be confirmed. We must take the file, target relevant explorations to pursue further investigation or simply monitor.

-Profile 2: Suspicion of Rare Disease Requiring Adequate Biology

These cases involve a 62-year-old woman with cirrhosis and hypermanganesemia, a 22-year-old suspected dystrophic maculopathy, and a 44-year-old patient with acute coronary syndromes related to Fibromuscular dysplasia of the coronary arteries for which an exploration of molecular genetics is indicated but whose realization requires a very specialized laboratory to identify and contact.

Profile 3: Rare Disease and Infernal Care Journey

The 31-year-old patient presents with a long-term fever which allows to discover a rare conjunctive inflammatory tumor located at the mediastinal level in 2016 after multiple displacements between Tebessa, Batna, Setif, Annaba, Algiers.

Discussion - Conclusion

Rare diseases in our practice are marked by difficulties of diagnostic management (unavailability of adequate tests) and treatment and the vital and functional prognosis can be worse depending on the organs affected, the degree of impairment and treatment possibilities that can be expected for some rare diseases (eg Gaucher disease).

With regard to these diseases, professionals must develop a patient-centered approach and a doctor-patient relationship marked by Empathy, Communication, and Objective Measurement of Physical and Moral Suffering while persevering in the acquisition and updating knowledge. At the institutional and collective level, the creation of an Algerian Reference Center for Diagnosis and Treatment of Rare Diseases should be considered as part of a National Plan for the Fight Against Rare Diseases and an International Partnership to be defined and implemented. hope remains with a reinforced awareness of issues.

STUDY OF HUMAN GIARDIASIS IN REGION OF SETIF

FELLAHI Amina¹, BOUNECHADA Mustapha¹

¹Faculty of Natural Sciences and Life

²Ferhat Abbas Setif University

amina91fleur@gmail.com

Abstract:

Background: The *Giardia* is a parasitic disease spread by fecal due to flagellate *Giardia intestinalis*. It occupies a special place in the digestive flagellosomes both by its frequency and pathogenicity. Indeed, when it operates in a chronic fashion, *Giardia* is often responsible for malabsorption which can be severe, especially in children.

Methods: The study focused on Giardiasis in the north, center and south of the wilaya of Setif, a prospective and epidemiological survey was conducted about a search for cases of infestation by *Giardia*. Questionnaires investigations were intended to nurseries of cribs, based on the capacity, the knowledge term *Giardia*, food and personal hygiene was submitted, and another closed-type questionnaire was designed to

Laboratories and different regional health services, in order to know the prevalence of gastrointestinal and parasitic diseases they have diarrhea that can be rattlesnake infestation by bacteria or parasite *Giardia* type. Diagnostic methods adopted were staining lugol and fresh.

Results: Our results showed an increase in cases in April, September and October, since the temperature is high with the lack of rain.

The prevalence of infection with *Giardia intestinalis* is significantly higher in north of Setif, whose children range comes first. Also saved intestinal parasites are the leading cause of morbidity especially in children with a rate over 70% which *Giardia* exceeds 1/3 of all. At the microscopic level, the liquid nature of the stools was most often found, (66%) of cases.

Collective childcare and travel in endemic areas are also more pronounced risk factors for this infection.

Conclusion: A good health education, a remediation action and drinking water supply as well as a curative treatment of bondholders are the only guarantors to decrease morbidity.

Keywords: Giardia, entérotrope, epidemiology, Setif, prophylaxis.

The relationship between MTHFR C677T gene polymorphism and essential hypertension in a sample of an Algerian population of the Oran city

Asma Amrani-Midoun^{1*}, Soto Romuald Kiando^{2,3}, Cyrielle Treard^{2,3}, Xavier Jeunemaitre^{2,3,4}, Nabila Bouatia-Naji^{2,3}

^{1*} Biotechnology Department, Faculty of Sciences of Nature and Life, University of Oran 1 Ahmed Benbella, Oran, Algeria

²INSERM, UMR970 Paris Cardiovascular Research Center (PARCC), Paris F-75015, FRANCE

³Paris-Descartes University, Sorbonne Paris Cité, Paris 75006, FRANCE

⁴AP-HP, Department of Genetics, Hôpital Européen Georges Pompidou, Paris, F-75015, FRANCE

Dr.asma.amrani@gmail.com

Abstract:

Background

Many studies have investigated the role of 5,10-methylenetetrahydrofolate reductase (*MTHFR*) C677T gene polymorphism in essential hypertension (EH), but with conflicting results.

Aim

To determine the eventual association between 5,10-methylenetetrahydrofolate reductase (*MTHFR*) C677T gene polymorphism and hypertension in a sample of Algerian population from the Oran city.

Methods

A case-control study has been performed in 154 subjects including 82 hypertensives defined as subjects with elevated systolic blood pressure $SBD \geq 140$ mmHg and or sustained diastolic blood pressure $DBP \geq 90$ mmHg, and 72 normotensive subjects. Polymerase chain reaction (PCR) combined with restrictive fragment length polymorphism (RFLP) was used to detect the *MTHFR* C677T variant.

Results

We observe no significant differences between allelic and genotypic frequencies between cases and controls for C677T polymorphism (OR=1.51, 95% CI= 0.89-2.56, P=0.13). Analyses adjusted for age, sex and body mass index improved the association level, though the association was still not significant (30% vs. 22%, OR=1.75, 95% CI= 0.95-3.24, P=0.07).

Conclusion

This work showed that genetic polymorphism related to the *MTHFR* gene (C677T) is not associated with the risk of hypertension in this sample of Algerian population. Larger case-control samples are required to clearly assess the role of this genetic variant in EH.

.Keywords: *MTHFR* C677T gene polymorphism; hypertension; Algerian population; case-control study.

Serum Total Homocysteine Level in Association with Folate and Vitamin B₁₂ Status among Algerian Prostate Cancer Patients.

Rima Mouhoub¹, Karima Haddad¹, Meriem Belhout¹, Abdel Aziz Chibane², Mohamed El-Hadi Cherifi³, Bahia Djerdjouri¹, Malika Khelil¹.

¹Department of Cellular and Molecular Biology, Faculty of Biological Sciences, USTHB, Algeria.

²Department of Urology, Medical University Hospital of Mustapha Bacha, Algiers, Algeria.

³Department of Biochemistry, Medical University Hospital of Bainem, Algiers, Algeria.
mouhoub.rima@gmail.com

Background: Folate, vitamin B₁₂ and homocysteine are essential for methyl group metabolism and thus also for DNA methylation. Several studies have been demonstrated that metabolic disorders of these elements may lead to carcinogenesis. In the present study, we proposed to evaluate the associations between folate and vitamin B₁₂, with fasting plasma tHcy concentration in prostate cancer (PCa) patients.

Methods: A case-control study was conducted with 40 newly patients diagnosed with prostate cancer and 50 age matched healthy controls. Serum level of total homocysteine, folate and vitamin B₁₂ were measured by enzyme conversion immunoassay and radioassay, respectively using the ARCHITECT system (Both Abbott-Diagnostics Division).

Results: The average rate of total PSA was 20.97 ng/ml (ranged between 8-60 ng/ml) and 53% of patients had a PSA $\geq$ 20 ng/ml. Histology confirmed that all patients accounted for prostatic adenocarcinoma with prognostic Gleason score that ranged between 7 and 8. There are no significant differences between cases and controls about serum Hcy levels (adjusted OR = 0.160% CI = 0.832-1.031), folate levels (adjusted OR = 0.428% CI = 0.977-1.008) and vitamin B₁₂ (adjusted OR = 0.103% CI = 0.992-1.001).

Conclusion: In this study, the results show that homocysteine is not involved in prostate cancer. However, this study shows that the sporadic form is much more prevalent than familial one. The diagnosis is often made too late in advanced stage with a high PSA levels and biopsy showing high levels of Gleason

Keywords: Prostate cancer; Homocysteine, Vitamin B12, Folate.

Tyrosine kinase inhibitors for radioactive iodine-refractory differentiated thyroid cancer

I. Lahfa – Merad¹ ; S. Ghomari¹

¹ Department of medical oncology of the university hospital center of Tlemcen
Medecine Department. Laboratoire Toxicomed. University of Tlemcen.

Ilhammerad13@gmail.com

Abstract

Background : Complete total thyroidectomy is the treatment of choice for Differentiated thyroid cancer (DTC). Radioiodine is routinely recommended in high-risk patients and considered in intermediate risk DTC patients. DTC cancer cells, during tumor progression, may lose the iodide uptake ability, becoming resistant to radioiodine, with a significant worsening of the prognosis.

Until recently, no truly effective treatment options have existed for patients with radioactive iodine refractory differentiated thyroid cancer. Patient with locally advanced or metastatic differentiated thyroid cancer usually have a poor prognosis. As new therapeutic options, tyrosine kinase inhibitors may slow down progression and stabilize the disease.

Method : We report a case of a 48 year-old man diagnosed with follicular thyroid cancer with disease duration of 10 years. He was treated by total thyroidectomy, seven high-dose radioiodine treatments and two irradiation therapies. Sorafenib therapy was started in december 2013, due to disease progression with lymph node and bone metastases. The disease was stabilized for 2 months and then progression in the femoral bone was detected with rapid elevation of thyroglobulin level, and deterioration of general condition with bone pain treated by morphinics then apparition of lung Metastases. One month after the patient die.

Result: In this patient with a radioiodine-refractory, poor-risk follicular thyroid cancer, the sorafenib therapy resulted in stable disease for only 2 months and after the disease progress quickly with a deterioration of his performance status ,perhaps should we introduce this targeted therapy as earlier as possible when the performance status is still good .

Conclusion: Sorafenib may be a useful therapeutic possibility in the management of follicular thyroid cancer with distant metastases. If the tumor mass can be reduced by surgical intervention, sorafenib should be considered as earlier as possible when the tumor Become radioactive iodine refractory with a good performance status.

Keywords : thyroid cancer, follicular thyroid cancer, radioiodine refractory, tyrosine kinase inhibitor , sorafenib

IWPE: International Workshop on Publication and Ethics

Approach to writing case reports for biomedical journals

Mehrdad Jalalian

Director, Mehrafarin Scientific Publishing, Kish Island, Iran. Editor-in cheif of Electronic Physician Journal, Mashhad, Iran.
Drmehrdad@gmail.com

Abstract

Case reports have the potential of leading the progress of medical science. Some case reports present unique or rare cases and others present educational cases. Both of these classic or unique case reports and educational case reports have invaluable influence on the development of new hypotheses or triggering new research, or in the classic education of medicine to residents and interns. This session guides the authors who want to prepare and submit their case report articles to peer reviewed medical journals. This session includes step by step guide on structure of different parts of the case report with emphasize on CARE Checklist (2013) of information to be included when writing a case report. The CARE guidelines for case reports help reduce bias, increase transparency, and provide early signals of what works, for which patients, and under which circumstance.

Keywords: Case report, CARE checklist, Scientific writing

Approach to design and publish Randomized Controlled Trials

Mehrdad Jalalian

Director, Mehrafarin Scientific Publishing, Kish Island, Iran. Editor-in cheif of Electronic Physician Journal, Mashhad, Iran.
Drmehrdad@gmail.com

Abstract

Clinical trials are among the most rigorous types of medical research and the highest quality of publication. The main reason is that Randomized Controlled Trials (RCTs) can trigger potential improvements in health and treatment policies. This session covers some essential ideas on how to design and organize different parts of clinical trials reports and minimum requirements of such research to be appropriate and have a chance of publication in peer reviewed biomedical journals. In summary, following the research ethics of clinical trials, and controlling over potential confounding factors are main factors that determine the chance of RCTs to be published. The author will also emphasize on following CONSORT 2010 check list and flow chart.

Keywords: Clinical trial, Randomized Controlled Trial (RCT), Scientific writing, CONSORT



Call for paper

Medical Technologies Journal (MTJ)



E-ISSN: 2572-004X web site: <http://medtech.ichsmt.org>

Email: medtechjournal@gmail.com



Medical Technologies Journal is an online international refereed journal published from 2017. It aims to publish an interdisciplinary research findings and innovations in medicine, sciences and technologies. The journal is available for open access at the web site: <http://medtech.ichsmt.org>

Scopes:

Section 1: Medical technologies.

Information System, Knowledge engineering, Case-Based Reasoning, Multi-Agent Systems, Web applications, Social Networks, Data Sciences, Distributed Systems, Cloud computing, Biomedical Engineering, Medical physics, Medical Bio-Chemistry, Medical Mechanical Engineering, Imaging Science, Image and signal processing for medicine, Medical Computer-Aided Diagnosis, Bioinformatics, Drug design, Data mining and knowledge discovery for health sciences, Mobile health, Telemedicine, Health 2.0, Medical education, E-learning for medicine....ETC

Section 2: Health sciences.

Surgery, Internal Medicine, Midwifery, Nursing, Microbiology and Infectious Diseases, Psychiatry, Pediatrics, Cardiology, Neurology, Nephrology and Urology, Orthopedics, Neurosurgery, Dermatology, Rheumatology, Hematology and Transfusion Science, Anatomy, Histopathology, Laboratory, Oncology, Community Health, Occupational Health, Environmental Health, Social Health, Epidemiology, Assistive Technologies in Medicine, Social insurance medicine, Public health, Patient Security, ..ETC

Section 3: Conferences proceedings and abstracts.

All peer-reviewed conferences proceedings and abstracts on the above cited topics.

Editor Manager

Dr. Abdeldjalil KHELASSI, Abou Bekr Belkaid University of Tlemcen, Algeria

Associate Editors

Dr. Abdelkarim Mezian, CERIST, Algiers, Algeria.

Dr. Mehrdad Jalalian, Founder of Mehr Publishing, Iran

Prof. Dr. med. Wolfgang Seger, University of Bremen, Germany

Pr Said tadjou edin Hassan Universiti Putra Malaysia, Serdang, Selangor D. E., Malaysia.

Dr Vania Viera Estrila , Faculty member, Universidade Federal Fluminense (UFF), Rio de Janeiro,