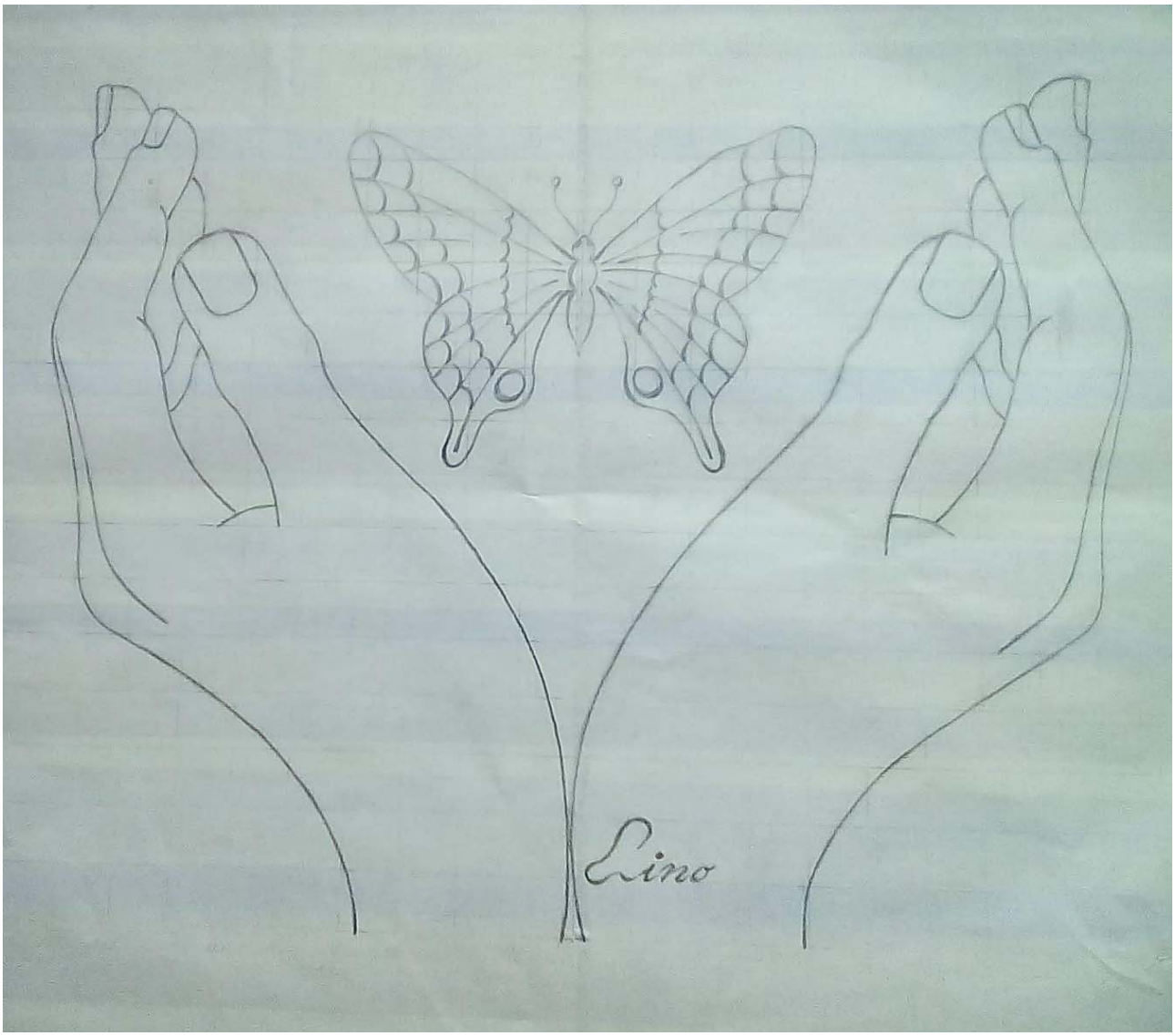
INTERNATIONAL JOURNAL OF MEDICAL AND NURSING APPROACH (IJMNA)

Volume 1 (issue 1) **2019 December**



MEDICAL AND NURSING

"ONLY USING MEDICAL AND NURSING HANDS... YOUR WINGS CAN FLY AGAIN"

www.med-inf.it

International Journal of Medical and Nursing Approach (IJMNA)

The IJMNA is the official Journal of the Scientific Medical and Nursing Association (Med-Inf).

Editor: Centro Copie s.r.l.

Via Appia Lato Itri 37/41

Registration:

Tribunale di Latina n° cronologico 1096/2019 del 12/08/2019 (RGVG n° 1860/2019).

Med – Inf SCIENTIFIC ASSOCIATION

Organizational secretariat

Via jurmala 136 bis; 04019 Terracina (Latina), Italy.

Tel. +39 333-3019781

E-mail: segreteria@med-inf.it

INDICE GENERALE

VHF exploration using HRV analysis in the frequencies domain.

Marchitto N.,* Rossi V., Fusco L.,*** Di Febbo C.,****

Martynenko A.***,Raimondi G.******

*** Alfredo Fiorini Hospital Terracina, (Italy); ** Sapienza University of Rome (Italy),**

***** Villa Laura Bologna, (Italy); **** Università degli Studi G. d'Annunzio Chieti (Italy);**

******* Karazine University, Kharkov (Ucraine); ****** Sapienza University of Rome (Italy).**

Corresponding Authors: Rossi V. e-mail: **vivi-rossi1@hotmail.it**

ABSTRACT

Background: Heart beat rhythm is regulated by autonomic nervous system(ANS), and its variability, called heart rate variability(HRV), reflects ANS activities and provides meaningful information for clinical intervention in cardiovascular disease. Conventional spectral analysis of HRVcontains three major frequency bands in quantitative ANS assessment, including very low frequency band (VLF;0.01-0.04Hz),low frequency band (LF;0.04-0.15Hz), and high frequency band (HF;0.15-0.4Hz), in short-term recording (5-10 minutes). Each frequency band indicates specific ANS activities, such as HF related to parasympathetic nervous activities(PNS) and LF related to the modulation of sympathetic nervous activities(SNS). Recently it is reported a new frequency band defined very high frequency band(VHF;0.4-0.9Hz) but literature reports on VHF are scanty. VHF power is usually negligible. The presence of VHF peaks is an important finding in the power spectrum of heart rate fluctuations. VHF peaks, assumed to be harmonics of the respiratory rate, originate from non linear coupling between the respiratory system and heart. There are two types of VHF peaks in HRV: harmonics of respiration and peaks uncorrelated with respiration. The physiological mechanism of this phenomenon is still unclear. **Aim**: to define the spectral VHF component in an adult and elderly population. **Materials and Methods**: in the present study we have enrolled 129 patients (65 F and 64 M) splitted into 6 groups. We divided the population in 2 groups according to age (60-79, 33 patients with mean age 68.8 ± 4.7 years old and 34 patients 80-100 years old, with mean age 85.1 ± 3.4 years old). In the first group 22 patients were affected by arterial hypertension, 4 were diabetic and 7 were obese, 4 were smokers. In the older group 27 patients were affected by hypertension, 4 were diabetic and 6 obese, 3 were smokers. The other four group are studied during changes in cardiovascular hemodynamics induced by postural variations and/or during changes in respiratory rate induced to mediate controlled breath. **Protocol:** After 10 rest minutes we recorded a digital ECG (CARDIOLAB XAI-MEDICA) for 5 minutes. Recorded data were analyzed with the same CARDIOLAB XAI MEDICA software for HRV linear analysis in the time and frequency domain. Statistical analysis was performed with SigmaStat 3.5 software for Windows. Paired T-test for quantitative variables were used to compare the effect of the treatment in the different groups. Statistical significance was fixed at $P < 0.05$. **Results**: We observed no significant differences in R-R interval and in Total Power between the two groups, while we found significant differences in the other indexes of spectral analysis between the two groups. In fact in the older group the parasympathetic indexes had significantly increased. The results are expresses as mean ± SD. **Discussion**: Our data show that in very elderly people the VHF component is much more represented than in younger patients. Although only a few investigations have reported the existence of VHF oscillations in HRV, most authors speculate on the origin of these components. All the protocols of the present study show statistically significant variations of the VHF variable both in the controlled breath at 6 and 12 respiratory acts / min. These variations are statistically significant also in the protocol "at rest vs tilt" and "at rest vs inversion bench", but this protocols do not show the same statistically significant variation of the VHF if data about the vertical position (Tilt) is compared with the data about the inversion position (bench rotation at -135 °). **Conclusions**: No investigation has ever been carried out design specifically to elucidate the origin of this frequency range in HRV, which remains hither to conjectural. The present study did not address the origin of VHF either. We can suggest that the activity in this frequency range may be related to the

intensity of a reduction in the cardiac parasympathetic influence as a consequence of autonomic neural fiber damage, as has been shown in patients affected by cardiac autonomic neuropathy. In any case VHF activity of HRV is not an artefactual phenomenon but is integral to the cardiovascular autonomic control. The variations found in protocol 4 could be dependent on respiratory dynamics since, with postural variations, the abdominal organs exercise different compression on the thorax and in particular on the diaphragm muscle with consequent variation of the respiratory dynamics. For this reason, we cannot definitively affirm that the VHF variable can only be influenced by respiratory activity, but we can say with certainty that the value of the VHF variable is highly dependent on respiratory modulation. Since the protocols were performed in numerically heterogeneous population groups, we believe that further studies on a greater number of subjects are useful in order to have definitive conclusions.

GUIDELINES FOR AUTHORS

http://www.med-inf.it/sottomissioni

Manuscripts have to be double-spaced with two-centimeter margins.

Head-paper: To facilitate the review process, manuscripts should contain max, 2 tables and/or 3 figures.

An Original Scientific Article or an Original Case Report have educational value and therefore the evaluation will take into account the originality and the quality of the presentation.

Original scientific article Include: Abstract, Background, Materials and Methods, Results, Discussion, Conclusions and References.

Original Case Report Include: Abstract, Introduction, Case Report (s), Discussion, Conclusions and References.

Letters to the Editor: These are written on invitation and express the authors' viewpoint.

All Manuscripts must be written in English.

Optionally, Med-Inf scientific secretary, offers our professional copy-editing service.

The **first page** must contain:

1) title (lowercase), without acronyms;

2) first name and family name of each author, separated by commas;

3) affiliation(s) of author;

4) full name and full postal address of the corresponding author. Phone, fax number and e-mail address for the correspondence should also be included;

5) three to five key words.

The **last page** should contain:

1) acknowledgments;

2) authors' contributions, e.g., information about the contributions of each person named as having participated in the study;

3) disclosures about potential conflict of interests;

References

If **TABLES** are used, they should be double-spaced on separate pages. They should be numbered and cited in the text of the manuscript.

If **FIGURES** are used, they must be submitted as jpg files, minimum 300 dpi; i).

One column width (7.5 cm) or 2 column widths (16 cm).

A different caption for each figure must be provided at the end of the manuscript, not included in the figure file.

Authors must obtain written permission for the reproduction and adaptation of material which has already been published.

Authors must send the written permission before publication (otherwise the paper cannot be published).

A box with a clear description of the organization will be included in the manuscript. Papers highly polemic, written by an author addressing his own opinion and not an organization position or with a theme of local interest will not be published.

Conclusions and opinions expressed by the authors do not necessarily reflect the policies of the International Journal of Medicall and Nursing Approach.

If abbreviations are used in the text, authors are required to write full name+abbreviation in brackets [e.g. Chronic Heart Failure (CHF)] the first time they are used.

Original Articles (4000 words max, abstract 250 words max, 30 references max, 3/5 tables and/or figures). A maximum of 10 authors is permitted and additional authors should be listed in an ad hoc Appendix.

References must be numbered consecutively in the order in which they are first cited in the text (not alphabetical order), and they must be identified in the text by Arabic numerals in superscript. References to personal

communications and unpublished data should be incorporated in the text and not placed under the numbered

References should be provided directly within the MS-Word document in the References section. References must be prepared as follows:

- more than three authors, cite 3 authors, et al. If the paper has only 4 authors,

- title style: sentence case; please use a capital letter only for the first word of the title;

PEER REVIEW POLICY

All manuscripts submitted to our journal are critically assessed by external and/or in-house experts.
Each paper is first assigned by the Editors to an appropriate Associate Editor who has knowledge of the field discussed in the manuscript. In the first step of manuscript selection if a manuscript does not receive a sufficiently high priority score to warrant publication, the editors will proceed to a quick rejection. The remaining articles are reviewed by at least two different external referees.
Manuscripts should be prepared according to the Uniform Requirements established by the International Committee of Medical Journal Editors (ICMJE). Authorship: all persons designated as authors should qualify for authorship according to the ICMJE criteria. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship credit should only be based on substantial contributions to:
1) conception and design, or analysis and interpretation of data;
2) drafting the article or revising it critically for important intellectual content;
3) final approval of the version to be published.
General supervision of the research group is not sufficient Italian for authorship. Any part of an article critical to its main conclusions must be the responsibility of at least one author. Authors should provide a brief description of their individual contributions. Obligation to Register Clinical Trials: the ICMJE believes that it is important to foster a comprehensive, publicly available database o clinical trials. The ICMJE defines a clinical trial as any research project that prospectively assigns human subjects to intervention or concurrent comparison or control groups to study the cause-and-effect relation ship between a medical intervention and a health outcome. Medical interventions include drugs, surgical procedures, devices, behavioral treatments, process-of-care changes, etc. Our journals require, as a condition of consideration for publication, registration in a public trials registry. The journal considers a trial for publication only if it has been registered before the enrollment of the first patient. The journal doe not advocate one particular registry, but requires authors to register their trial in a registry that meets several criteria. The registry must be accessible to the public at no charge. It must be open to all prospective registrants and managed by a non-profit organization. There must be a mechanism to ensure the validity of the registration data, and the registry should be electronically searchable. An acceptable registry must include a minimum of data elements. For example, ClinicalTrials.go (http://www.clinicaltrials.gov), sponsored by the United States National Library of Medicine, meets these requirements Protection of Human Subjects and Animals in Research: when reporting experiments on human subjects, authors should indicate whether the procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national) and with the Helsinki Declaration of 1975 (as revised in 2008). In particular, Med-Inf Association adopts the WAME policy on Ethics in Research (http://www.wame.org).
Documented review and approval from a formally constituted review board (Institutional Review Board - IRB - or Ethics committee) is required for all studies (prospective or retrospective) involving people, medical records, and human tissues. When reporting experiments on animals, authors will be asked to indicate whether the institutional and national guide for the care and use of laboratory animals was followed.

SUBMISSION PREPARATION CHECKLIST

As part of the submission process, authors are required to check off their submission's compliance with all of the following items, and submissions may be returned to authors that do not adhere to
1. The submission has not been previously published, nor is it before another journal for

consideration (or an explanation has been provided in Comments to the Editor).
2. The submission file is in Microsoft Word, or PDF document 3.
We fight plagiarism: please understand that your article will be checked with available tools for discovering plagiarism.
4. The text is double-spaced; uses a 12-point font; employs italics and all illustrations, figures, and tables are placed within the text at the appropriate points, rather than at the end. 5.The text adheres to the stylistic and bibliographic requirements outlined in the Author Guidelines, which is found in About the
6. Please read this advice and download associated files. The Inter- national Committee of Medical Journal Editors has recently published in all ICMJE journals an editorial introducing a new "Disclosure Form for Potential Conflict of Interest", with the aim to establish uniform reporting system, we sting differences in current formats or editors' requests.
Authorship: all persons designated as authors should qualify for authorship according to the ICMJE criteria. Each author should have participated sufficiently in the work to take public responsibility for the content. Authorship credit should only be based on substantial contributions to:
1) conception and design, or analysis and interpretation of data;
2) drafting the article or revising it critically for important intellectual content;
3) final approval of the version to be published.
These three conditions must all be met. Participation solely in the acquisition of funding or the collection of data does not justify authorship. General supervision of the research group is not sufficient therefore asking you to duly fill in the "Uniform Format for Disclosure of Competing Interests in ICMJE Journals" and upload it on the Web site of the Med-Inf Association your work is involved with or email it back to us, in mind to allow Med-Inf Association to peer-reviewing your work. The document is in Adobe format, it includes instructions to help authors to follow the right procedure and is user-friendly.

Kindly note that the format have to be completed and signed by each author of the work.

Copyright notice

Med-Inf Association has chosen to apply the Creative Commons Attribution to all manuscripts to Non-Commercial 4.0 License (CC BY-NC 4.0) be published An Open Access Publication is one that meets the conditions: following two The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use 2, A complete version of the work and all supplemental materials, including a copy of the permission as stated above, in a suitable standard electronic format is deposited immediately upon initial n at least one online repository that is supported by an academic institution, scholarly society, government agency, or other well-established organization that seeks to enable open access, un- publication i restricted distribution, interoperability, and long-term archiving. Authors who publish with this journal agree to the following terms 1. Authors retain copyright and grant the journal right of first publication with the work simultaneously licensed under a Creative Commons Attribution License that allows others to share the work with an acknowledgement of the work's authorship and initial publication in this journal. 2. Authors are able to enter into separate additional contractual arrangements for the non-exclusive distribution of the journal's published version of the work (e.g., post it to an institutional repository or publish it in a book), with an acknowedgement of its initial publication in this journal. 3. Authors are permitted and encouraged to post their work online (e.g., in institutional repositories or on their website) prior to and during the submission process, as it can lead to productive exchanges).

PRIVACY STATEMENT

Privacy is an important concern for users of our site and is something that Med-Inf Association takes very seriously. Below you will find our policy for protecting users' personal information. Registration on our website is optional and voluntary. Browsing and viewing articles on our website does not require any personal information to on be submitted from users. Nor do these functions require the user's browser to be set to accept cookies. Some other services published on our website do require the use of cookies and information such s name, e-mail, etc. This is necessary for security reasons and to enable us to be able to assure standards of scientific integrity. Users may submit further personal information (e.g. details of research areas of interest) in order to take advantage of present and future personalization facilities on our website. In accordance with European Union guidelines, registrants may decline to provide the information requested. They should be advised, however, that Med-Inf Association may be

unable to deliver its services unless at least the information necessary for security and identification purposes is provided. In order to offer the best possible service to users, PAGE Press tracks the patterns of usage of pages on the site. This enables us to identify the most popular articles and services. Where users have provided details of their research areas of interest, this information can be linked to them, helping Med-Inf Association to offer scientists, the most relevant information based on their areas of interest. User information will only be shared with third parties with the explicit consent of the user. Publishing a scientific manuscript is inherently a public (as opposed to anonymous) process. The name and e-mail address of all authors of a Med-Inf Association manuscript will be available to users of Med-Inf Association. These details are made available in this way purely to facilitate scientific communication. Collecting these e-mail addresses for commercial use is not allowed. Med-Inf Association itself send unsolicited e-mails to authors, unless it directly concerns the paper they have published on Med-Inf Association journals (IJMNA). Med-Inf Association reserves the right to disclose members' personal information if required to do so by law, or in the good faith and belief that such action is reasonably necessary to comply with a legal process, respond to claims, or protect the rights, property or safety of Med-Inf Association, employees or members

ARTICLE/CASE REPORT/ LETTER SUBMISSION: 250,00 € ITALY; 300,00 € ABROAD (SHIPPING COSTS)

SUBSCRIPTIONS

100,00 (Italy):		students)
180,00 (abroad)	50,00(	Support One number 25,00+ shipping costs

Send requests to segreteria@med-inf.it specifying the name of the journal and the type of subscriptions.

INTERNATIONAL JOURNAL OF MEDICAL AND NURSING APPROACH

Tutti gli articoli pubblicati su International Journal of Medical and Nursing Approach sono redatti sotto la responsabilità degli Autori. La pubblicazione o la ristampa degli articoli della rivista deve essere autorizzata per iscritto dall'editore. Ai sensi dell'art. 13 del D.Lgs 196/03, i dati di tutti i lettori saranno trattati sia manualmente, sia con strumenti informatici e saranno utilizzati per l'invio di questa e di altre pubblicazioni e di materiale informativo e promozionale. Le modalità di trattamento saranno conformi a quanto previsto dall'art. 11 del D.Lgs 196/03. I dati potranno essere comunicati a soggetti con i quali l’associazione Med-Inf intrattiene rapporti contrattuali necessari per l'invio delle copie della rivista. Il titolare del trattamento dei dati è Med-Inf Association, via jurmala 136 bis, 04019 Terracina (Latina), Italy, al quale il lettore si potrà rivolgere per chiedere l'aggiomamento, l'integrazione o la cancellazione di cui all'art. 7 del D.Lgs 196 03.