

Spectral forecast: A general purpose prediction model as an alternative to classical neural networks

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ABSTRACT

Here, we describe a general-purpose prediction model. Our approach requires three matrices of equal size and uses two equations to determine the behavior against two possible outcomes. We use an example based on *photon-pixel coupling* data to show that in humans, this solution can indicate the predisposition to disease. An implementation of this model is made available in the supplementary material.

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A novel prediction method is described, implemented, and tested. The model revolves around three known states: two extreme outcomes (A and B) and one measurement (P). These states are represented by matrices that include sets of homologous parameters. An information spectrum is described as a series of predicted states ($M_1, M_2, M_3, \dots, M_d$) generated between the two extreme outcomes (A and B). The predicted states are compared with the known state (P) from the measurements to generate a similarity index. The trend generated by the values of the similarity index indicates how a system may behave against these two extreme outcomes.

INTRODUCTION

Nonlinear behavior is part of all the phenomena we know in nature, from weather to living beings and beyond. In biological

systems, nonlinear mechanisms are partially uncharted and a subject of general scientific interest for several decades.^{1,2} In medicine, perhaps the most important research segment is represented by the prediction of different diseases. The accurate prediction of the occurrence of a disease has always been regarded as the main tendency of clinical practice. Genetic diseases, which can be triggered by environmental factors, are inherently nonlinear in nature and their onset is unpredictable. Such a disease, with a non-linear behavior, is diabetes. Neural Networks (NNs) were the hope for prediction in the medical field in the 1980s and this trend was reborn in recent years.³⁻⁵ However, the medical context in which they are used and the partial subjectivity in the training of NNs slowly lose their much-anticipated value for certain specific tasks.^{6,7} Essentially, NNs are classifiers of information with prior or "in-flight" adaptation to the environment. Any pattern recognition strategy uses this classification approach. Nevertheless, such a classification based on

prior adaptation to the environment may not imply a prediction. We are inclined to believe that NNs are misused in some cases and the classification process is often confused with the prediction process. For instance, in a previous study, we struggled with a fundamental problem in which we tried to use NNs for the prediction of diabetes onset.⁸ There, we agreed that our NN correctly classified a new patient into one of the two classes, namely, type 1 diabetes (T1D) or type 2 diabetes (T2D). However, such a classification was a direct indication of the current state of the disease. In other words, it was merely a medical diagnosis. We then asked ourselves whether the NN can predict the evolution of a human

subject over time in the hope that we can predict the onset of the disease. Our experimental data have indicated that our NN classified the set of data in a fair manner but failed to indicate any valuable information about the evolution of a subject over time.^{9,10} In this respect, predictions that use Markov chains or classical statistical approaches showed more reliable results in the field of biology and medicine.^{11–13} However, here we propose a novel method of analysis, with implementation (see the [supplementary material](#)), as an alternative to classical NNs. **Note:** the word *spectral* refers to a series of predicted states arranged linearly between two known states.

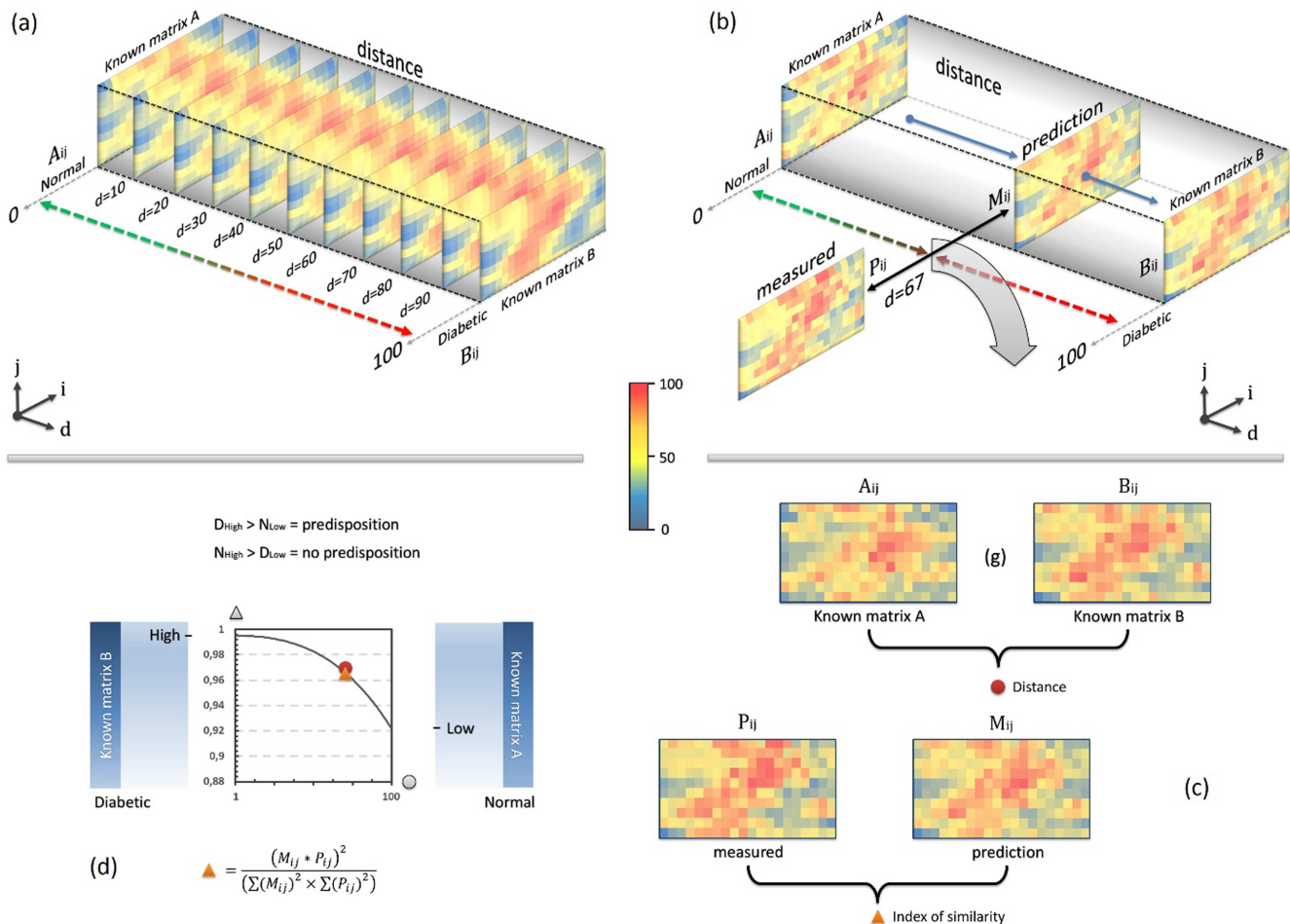


FIG. 1. The spectral forecast model. (a) The panel shows a spectrum of states. In each state, a matrix M is generated according to the data from matrix A , B , and distance d . The sequence of states represents a continuity between an initial state (matrix A) and a final state (matrix B). (b) The 3D approach to the method. The panel shows three known matrices, A , B , and P . Matrix A stores the representative data for one group, namely, the diabetic group, and matrix B stores data from the second group, the normal group. Matrix P contains new measured data that represent the current state of a system—a new subject, which is outside the two groups and whose evolution is of interest. A matrix M is created by using Eq. (1) and then compared with matrix P at each discrete step d by using Eq. (2). The panel shows the process frozen at $d = 67$ for exemplification. (c) It shows a 2D rationale to the method. The two matrices A and B are used to generate the M matrix. Matrix M is compared to matrix P in order to obtain a similarity value between 0 and 1, in which 1 means perfectly similar and 0 means totally dissimilar. (d) A trend example resulting from the prediction process. The value of the similarity index was plotted on the y axis at each step (x axis). The left side of the chart represents matrix B and the right side represents matrix A . The trend was built from small lines that made the connection between the similarity points of each discrete step. High to low or low to high features of the trends signify a predisposition or a protection for the disease. All matrices are shown in the form of heat maps, where dark red represents a maximum value of 100 and dark blue represents the minimum value of zero.

MATERIALS AND METHODS

In order to test our model, we collected and used the data related to the electrical activity signals of the human skin from our most recent experiment.⁸⁻¹⁰

Datasets and context

The electric activity on the skin surface of the trunk was measured by using 200 sensors in three groups: a control group A—18 normal subjects, a group B—18 diabetic subjects, and a test group C—20 normal subjects (ten subjects with confirmed family predisposition for T2D and ten subjects without family predisposition for T2D).⁸ The electrical signals were collected using the photon-pixel coupling method and were stored as numerical values (0...100) in a 10 × 20 matrix for each subject.^{8,9} An average was taken along the 18 subjects in group A and group B, yielding a 10 × 20 matrix for each, namely, matrix A and matrix B.⁸ These average matrices represent the main characteristics of each group. A state space was considered between the two matrices of group A and group B. The number of states was established by a distance index (*d*) and each state in this spectrum was represented by a matrix *M*. Each subject in group C was then evaluated by a consecutive comparison of their matrix *P* with each matrix *M* in the spectrum.

The spectral forecast model

In our approach, we used three known matrices: *A*, *B*, and *P*. A matrix *M* was further used to formulate the entire spectrum of unknown information between matrix *A* and *B* [Fig. 1(a)]. For this calculation, we devised a novel equation shown in (1),

$$M_{ijd} = \left[\left(\frac{d}{\text{Max}(A_{ij})} \right) \times A_{ij} \right] + \left[\left(\frac{(\text{Max}(d) - d)}{\text{Max}(B_{ij})} \right) \times B_{ij} \right], \quad (1)$$

where *M_{ij}* represents the predicted matrix at every discrete step (*d*), *A_{ij}* represents the matrix of the normal group, and *B_{ij}* is the matrix associated with the diabetic group [Figs. 1(b) and 1(c)]. Also, *d* stands for distance and represents the total number of discrete steps taken from matrix *A* to matrix *B*. Thus, *M_{ijd}* can be considered a 3D tensor-like structure.

The evolution of *P* was predicted by a repeated comparison with matrix *M* at every discrete step (2). This comparison was made by using the similarity index,

$$S(d) = \frac{(M_{ijd} \times P_{ij})^2}{(\sum (M_{ijd})^2 \times \sum (P_{ij})^2)}, \quad (2)$$

where *S* is the similarity index and represents the normalized dot-product of *M_{ij}* and *P_{ij}*. *M_{ij}* stands for the predicted matrix at every discrete step and *P_{ij}* is the matrix originated from a newly measured

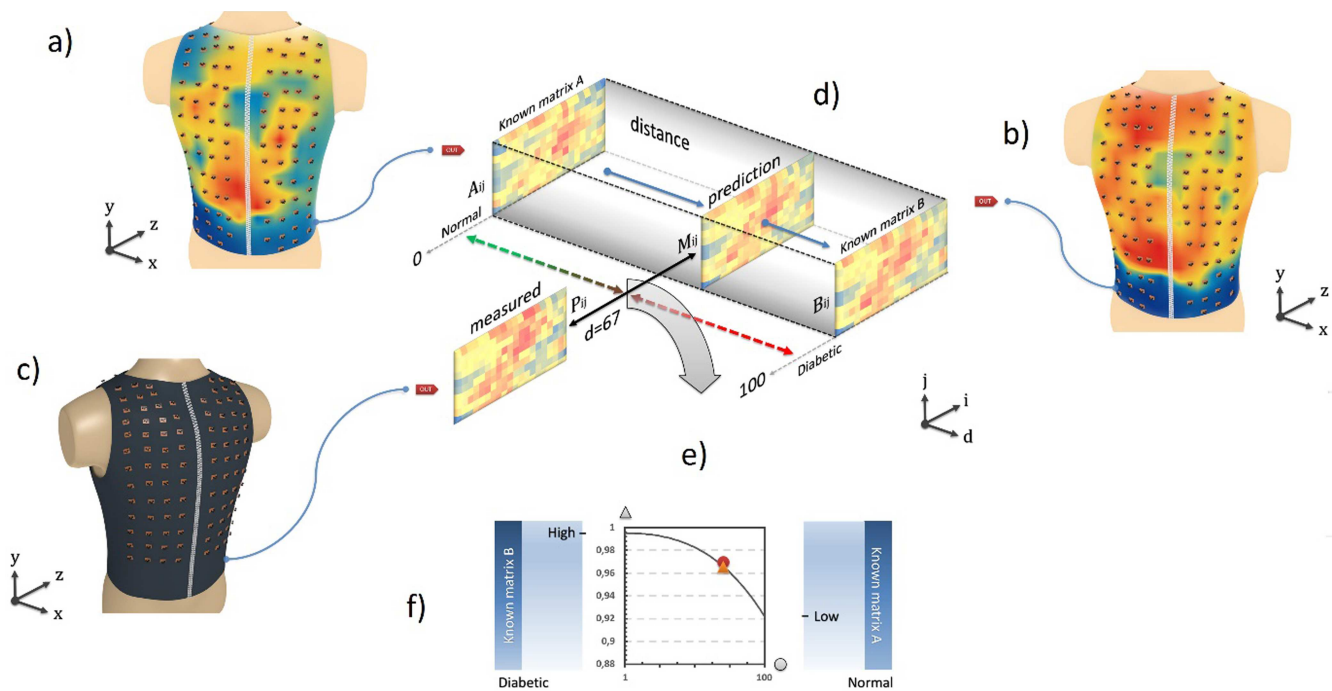


FIG. 2. The origin of the data. (a) The panel shows three known matrices, *A*, *B*, and *P*, and their provenience. (a) Data for the normal group represented by matrix *A*. (b) Matrix *B* stores data from the second group, the diabetic group. (c) The new measured data represented by matrix *P*. It represents the current state of a system; in our case, these measurements were made on a human subject. (d) shows a sweep made between matrix *A* and matrix *B*. (e) During the sweep, a matrix *M* was created at each discrete step *d* and then compared with matrix *P*, to generate the values of the similarity index. (f) The values of the similarity index were plotted on a graph to identify the future behavior of the newly measured system.

individual. The similarity index can take values between 0 and 1. As the similarity between the corresponding ij elements of matrix M and P increases, the similarity index S tends to 1. In contrast, as the differences between the values of the corresponding ij elements of matrix M and P are more frequent, the similarity index S tends to 0 [Fig. 1(d)]. The main result of the method is represented by a trend dictated by the values of the similarity index [Fig. 1(d)]. The trend was taken as the evolutionary route of the disease. In the [supplementary material](#), we show a ready-to-use implementation of the method.

Note: The total number of discrete steps was arbitrarily chosen. In this specific case, the maximum value for distance (d) was set at 100 for ease. A higher number of discrete steps increased the resolution of the prediction, which was desirable in many situations.

For instance, in some cases, the trend developed both ascending and descending characteristics. At low resolutions (i.e., $d < 10$), many of these fluctuating features remained undetectable and the insight of the results significantly dropped.

RESULTS AND DISCUSSION

Discretization is a practical approach for many prediction algorithms and it is used for almost all computational solutions. Here, we used a discretization strategy to increase the resolution of the spectrum underlying two groups: a healthy group and a diabetic group [Figs. 2(a) and 2(b)]. The data from the healthy group were considered as the initial state (state 0) and the data from the diabetic group were used to formulate the final state (state 100). The

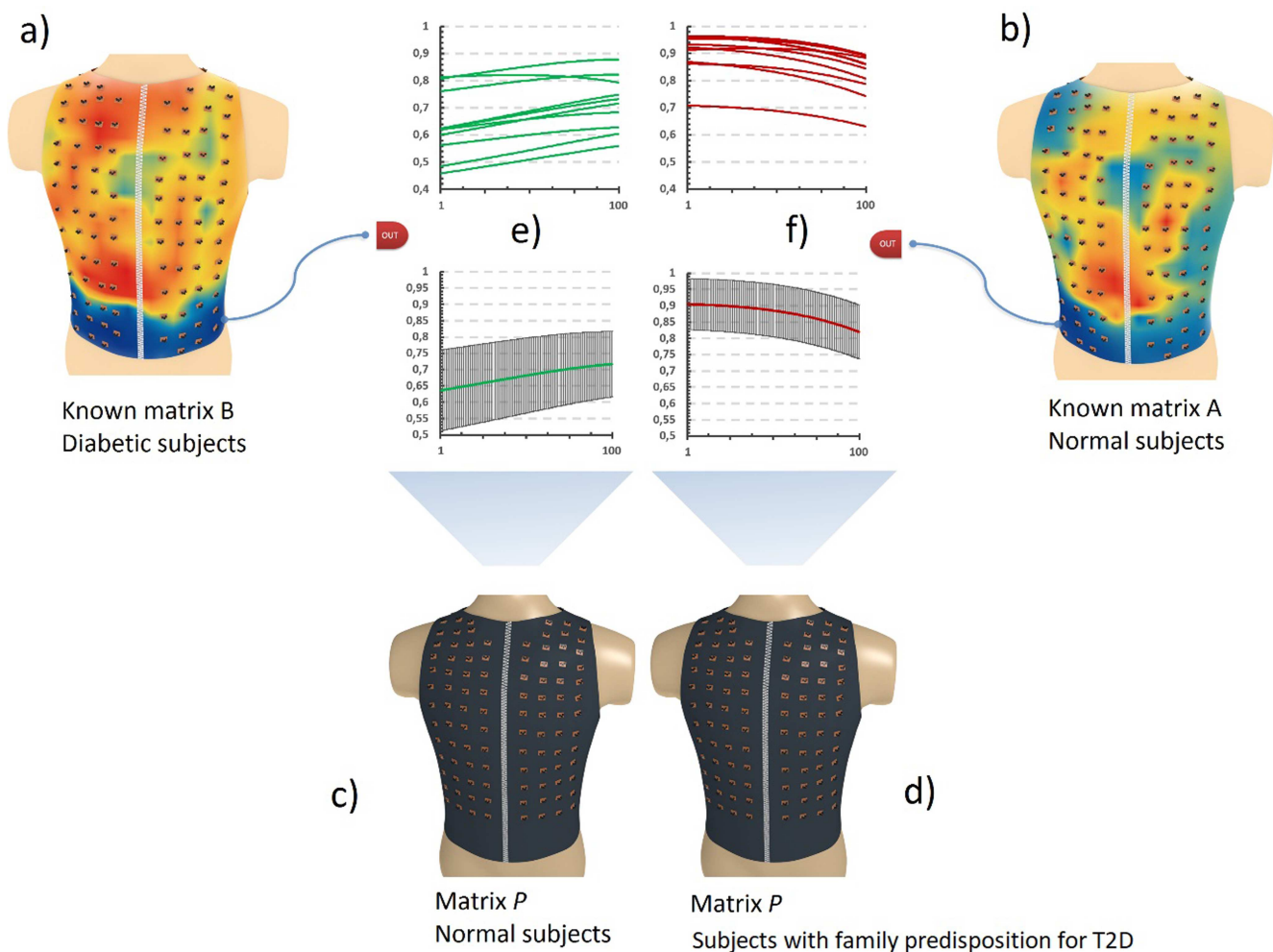


FIG. 3. The spectral forecast prediction—a diabetes case. (a) Average electrical signals from a diabetic group. (b) The average electrical signals from a normal group. (c) Electrical signals from normal subjects. (d) Electrical signals from subjects with family predisposition for T2D. (e) On top—the green lines represent the similarity index values per each normal subject and bottom—average and standard deviation of the normal group. (f) On top—the dark red lines represent the similarity index values per each individual with a predisposition to diabetes and bottom—average and standard deviation of the group with family predisposition for T2D.

number of intermediate states (state 1–state 99) was dictated by distance d , and the intermediate states properties were repeatedly formulated by matrix M [Figs. 2(c) and 2(d)]. To predict the evolution of a third group, a comparison was made along this spectrum [Figs. 2(c) and 2(d)]. Thus, data of matrix P from a new individual were compared to each matrix M in order to obtain the series of values for the similarity index [Figs. 2(e) and 2(f)]. To test the method, we decided to use our most recent data collected from a previous study.^{8–10} The predisposition trend for individuals in group C has been correctly predicted 100% of the time (Fig. 3). The subjects with family predisposition for T2D have shown an average similarity index of 0.877 ± 0.024493 , whereas normal individuals have shown an average similarity index of 0.68 ± 0.024499 .

In the normal group, the mean of the similarity index showed a value of 0.68 ± 0.111 and a maximum value of 0.8784 and a minimum value of 0.4592 [Fig. 3(e)]. In the T2D predisposition group, the mean of the similarity index showed a value of 0.87741 ± 0.08 and a maximum value of 0.9626 and a minimum value of 0.63086 [Fig. 3(f)]. The method has been implemented and can be found in the [supplementary material](#).

The meaning of the trend

Based on known clinical information and the observations made on each individual of the two groups, the trend of the similarity index values indicated whether a newly measured individual showed a predisposition or protection for T2D [Figs. 3(e) and 3(f)]. We speculate that the difference between the lower and the upper limit of the trend may represent a risk score for T2D. At this stage of the investigation, we can indicate if the newly measured subject tends toward the disease [Figs. 3(e) and 3(f)]. Experimentation has shown that the trend shaped by the similarity index does not exhibit only ascending or only descending features. Ascending and descending features of the similarity index can exist within the same plot. One example can be seen in Fig. 3(e), where one individual in the normal group shows both ascending and descending features. In the future, we will try to find the meaning of such a distribution because we speculate that it might be of particular importance for the prediction process.

A link between two unrelated data of the same dimension

The core of our method is represented by Eq. (1), which can have multiple uses on a wide range of values. One of these uses would be a normalization between two unrelated matrices with the same dimension. For instance, elements of matrix A may contain integers between 1 and 2×10^6 million and the elements of matrix B may contain probability values. In this case, Eq. (1) will mix the two matrices based on distance d . In the case of two probability matrices, Eq. (1) performs a normalization in favor of one of the matrices based on distance d . In other words, as matrix M is closer to matrix A , the homologous elements of matrix M will be more similar to matrix A than to those from matrix B . As matrix M will be closer to matrix B , matrix M will be more similar to matrix B . Consequently, if $d = 50$, matrix M will represent a mix equally similar to matrix A and matrix B .

Thoughts for the future

The important cases are those that show a maximum similarity index between the two groups. We suggest that these peak values may be a direct indication of the state of the subject before the onset of the disease. In order to predict the onset, we wish to establish a link between the temporal line of the disease and the states generated along the spectrum. Variations of the method may be constructed and we are eager to use other datasets in the same format (A, B, P). Future uses may include the field of meteorology, medical diagnostics, forensics, economic forecasts, or in the field of genetics for establishing the relationship between species. In biology, we also believe that Eq. (1) can be used for tissue structure prediction based on two groups of histological slides.

CONCLUSION

Here, we have shown the use of a novel prediction model. We proposed a simple method that provides an insight into the evolution of natural processes. To demonstrate the method, our current example considered the predisposition to disease in human subjects based on two known groups. In this approach, we correctly predicted the evolution of new subjects by using our previous data recorded from normal subjects and T2D subjects. Other applications of the method may further indicate the ideal conditions to which our method is appropriate or the limits of precision in the prediction of various metabolic diseases. In the future, we will try to make an association between a temporal line and the steps of the spectrum to indicate the time until the disease is triggered in days, months, or years. A ready-to-use implementation is present in the [supplementary material](#), which can also be used for other types of data.

SUPPLEMENTARY MATERIAL

See the [supplementary material](#) for the implemented version of the spectral forecast model.

ACKNOWLEDGMENTS

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RAPORT

ACTIVITATEA ȘTIINȚIFICĂ În anul 2020

- I. Articole publicate în reviste internaționale recunoscute și cotate ISI = 9
- II. Articole publicate în reviste naționale recunoscute CNCSIS-B+ = 6
- III. Lucrări științifice comunicate la manifestări naționale = 2
- IV. Cea mai importantă lucrare publicată în anul 2020

I. Articole publicate în 2020 în reviste internaționale recunoscute și cotate ISI = 9

1. TREATMENT OF THE PRIMARY IN METASTATIC PROSTATE CANCER
Gingu C, Heidenreich A, Andresanu A, Mihancea A, **Sinescu I**, Baston C (contribuție egală)
Current Opinion in Urology, July 2020, 30(4): 566-575. DOI: 10.1097/MOU.0000000000000779
ISSN: 0963-0643, SRI=1,208, **Impact factor = 2,056**
2. SYSTEMIC TREATMENT OPTIONS FOR METASTATIC HORMONE-SENSITIVE PROSTATE CANCER: MAKING SENSE OF THE DATA
Baston C, Preda A, Guler-Margaritis S, **Sinescu I**, Gingu C. (contribuție egală)
Current Opinion in Urology, May 2020, 30(4):576-583. DOI: 10.1097/MOU.0000000000000778
ISSN: 0963-0643. SRI=1,208, **Impact factor = 2,056**
3. ENHANCED RECOVERY AFTER SURGERY (ERAS) PROTOCOLS IN PATIENTS UNDERGOING RADICAL CYSTECTOMY WITH ILEAL URINARY DIVERSIONS: A RANDOMIZED CONTROLLED TRIAL
Olaru V, Baston C, Harza M, Preda A, Olaru Manuela, Gener I, **Sinescu I**. (contribuție egală)
Medicine, July 2020, Vol. 99, Issue 27, pag. e20902, DOI: 10.1097/MD.00000000000020902
ISSN: 0025-7974. eISSN: 1536-5964, SRI=1,327, **Impact factor = 1,870**
4. BUDESONIDE VERSUS SYSTEMIC CORTICOSTEROIDS IN IGA NEPHROPATHY A RETROSPECTIVE, PROPENSITY-MATCHED COMPARISON
Ismail G, Obrisca B, Jurubita Roxana, Andronesi Andreea, Sorohan B, Vornicu Alexandra, **Sinescu I**, Harza M
Medicine, June 2020, Vol. 99, Issue 26, pag. e21000, PMID: 32590815, DOI: 10.1097/MD.00000000000021000
ISSN: 0025-7974. eISSN: 1536-5964, SRI=1,327, **Impact factor = 1,870**
5. KIDNEY INVOLVEMENT IN HYPOCOMPLEMENTEMIC URTICARIAL VASCULITIS SYNDROME-A CASE-BASED REVIEW
Ion Oana, Obrisca B, Gener I, Sorohan B, Balanica Sonia, Mircescu G, **Sinescu I**.
Journal of Clinical Medicine, July 2020, Vol. 9, Issue 7, pag. 1-17, Art No.: 2131, DOI: 10.3390/jcm9072131
eISSN: 2077-0383, **Impact factor = 3,303**

6. **ANGIOTENSIN II TYPE 1 RECEPTOR ANTIBODIES IN KIDNEY TRANSPLANTATION: AN EVIDENCE-BASED COMPREHENSIVE REVIEW**
Sorohan B, Gener I, Leca N, Tacu Dorina, Obrisca B, Ileana Constantinescu, Baston C, **Sinescu I.**
Transplantation Reviews, 2020, Vol. 34, Issue 4, 10 pag. Art No.: 100573, doi.org/10.1016/j.trre.2020.100573
ISSN: 0955-470X, **Impact factor = 2,615**
7. **CONTEMPORARY ROLE OF PALLIATIVE CYSTOPROSTATECTOMY OR PELVIC EXENTERATION IN ADVANCED SYMPTOMATIC PROSTATE CANCER**
C. Surcel, Mirvald C, Tsaur I, Borgmann H, Heidegger I, Labanaris AP, **Sinescu I**, Tilki D, Ploussard G, Briganti A, Montorsi F, Mathieu R, Valerio M, Jinga V, Badescu D, Radavoi D, van den Bergh R, Gandaglia G, Kretschmer A, as part of the EAU-YAU PCa Working Party
World Journal of Urology, Nov. 2020; PMID: 33135127, DOI: 10.1007/s00345-020-03493-5
ISSN: 1433-8726. eISSN: 0724-4983, **Impact factor = 3,271**
8. **ROLE OF MIR-124 IN BLADDER CANCER - A REVIEW OF THE LITERATURE**
Petcu C, Baston C, Angelescu E, Maria Mirela Iacob, Ileana Constantinescu, **Sinescu I.**
Romanian Journal of Laboratory Medicine, 2020, RRML-00009-2020-02,
eISSN: 2284-5623, ISSN-L: 1841-6624, **Impact factor = 0.945**
9. **IMAGINE-IMPACT ASSESSMENT OF GUIDELINES IMPLEMENTATION AND EDUCATION: THE NEXT FRONTIER FOR HARMONISING UROLOGICAL PRACTICE ACROSS EUROPE BY IMPROVING ADHERENCE TO GUIDELINES**
Cornford P, Smith E, MacLennan S, Pereira-Azevedo N, Roobol M, Lumen N, Fullwood L, Duncan E, Dunsmore J, Plass K, Ribal M, Knoll T, Bjartell A, Van Poppel H, N'Dow J, Briganti A, - Collaborators: et al., **Sinescu I**, Surcel C, Baston C, Stoica R.I., Olaru V, et al. - Pan-European National Urological Society IMAGINE Collaborative
European Urology, 29 Oct. 2020, PMID: 33129581, DOI: 10.1016/j.eururo.2020.10.011
ISSN: 0302-2838, **Impact factor = 17,947**

II. Articole publicate în 2020 în reviste naționale recunoscute CNCSIS-B+ = 6

1. **INTRAVESICAL BCG: POSSIBLE PROTECTIVE IMPACT AGAINST COVID-19 IN NMIBC PATIENTS**
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(CNCSIS-B+475), indexată BDI – EBSCO și Copernicus
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Daniela Teodorescu, Baston C, Codoiu C, Guler-Margaritis SS, Gingu C, **Sinescu I.**
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4. **PRETRANSPLANT SCREENING FOR RENAL CELL CARCINOMA IN A PATIENT WITH AUTOSOMAL DOMINANT POLYCYSTIC KIDNEY DISEASE**
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5. **SPONTANEOUSLY RUPTURED KIDNEY AND RETROPERITONEAL HEMATOMA DUE TO UPPER TRACT UROTHELIAL CARCINOMA – CLINICAL CASE**
Teodorescu I. Daniela, Baston C, Codoiu C, Stoica R, **Sinescu I.**
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(CNCSIS-B+486), indexată BDI – ProQuest și EBSCO
6. **SPONTANEOUSLY URETHROVAGINAL FISTULA AFTER EXTRUDED MIDURETHRAL SLING EXCISION – CASE REPORT**
Stoica R, Vitan Madalina, Hurduc V, Stoica R, Teodorescu I. Daniela, Baston C, Codoiu C, **Sinescu I.**
Revista Română de Urologie, 2020, vol.19, nr.2, pag., ISSN: 1223-0650.

III. Lucrări științifice comunicate în 2020 la manifestări naționale = 2

1. DIAGNOSTIC PERFORMANCE OF A MULTI-BIOMARKER PANEL FOR THE NON-INVASIVE DETECTION OF BLADDER CANCER

Adina E. Stanciu, Anca E. Hurduc, Mădălina Bolovan, Stanciu M, Mihaela Mihai, Stoica R, I. Sinescu
Conferința online „Perspective interdisciplinare în oncologie”, 27-29 Aug. 2020

2. EXCIZIE DE TUMORĂ TESTICULARĂ ECTOPICĂ GIGANT CONCOMITENT CU LIMFODISECȚIE RETROPERITONEALĂ (LR) PRIMARĂ - STUDIU DE CAZ

Olaru V, Bratu L, Baston C, Andreșanu A, Preda AT, Sinescu I.
Al XXXVI-lea Congres al Asociației Române de Urologie ROMURO 2020 - online, București, 10-12 Dec. 2020
Rezumat publicat în *Revista Română de Urologie*, 2020, vol.19, nr.3, pag. ISSN: 1223-0650.CNCSIS: B+486

VI. Cea mai importantă lucrare publicată în anul 2020

1. KIDNEY INVOLVEMENT IN HYPOCOMPLEMENTEMIC URTICARIAL VASCULITIS SYNDROME-A CASE-BASED REVIEW

Ion Oana, Obrisca B, Gener I, Sorohan B, Balanica Sonia, Mircescu G, Sinescu I.
Journal of Clinical Medicine, July 2020, Vol. 9, Issue 7, pag. 1-17, Art No.: 2131, DOI: 10.3390/jcm9072131
eISSN: 2077-0383, Impact factor = 3,303

8 Decembrie 2020

Academician SINESCU C. IOANEL

Sectia Medicina
Raport prof Dr Irinel Popescu pentru anul 2020

Lucrari Publicate in anul 2020

Articole Publicate in Reviste indexate Web of Science Core Collection cu Impact Factor:

1. Plasma Small Extracellular Vesicles Derived miR-21-5p and miR-92a-3p as Potential Biomarkers for Hepatocellular Carcinoma Screening.Sorop A, Iacob R, Iacob S, Constantinescu D, Chitoiu L, Fertig TE, Dinischiotu A, Chivu-Economescu M, Bacalbasa N, Savu L, Gheorghe L, Dima S, **Popescu I**. Front Genet. 2020; 23; 11:712. **IF: 3.528**, PMID: 32793278.
2. Potential Circulating Biomarkers of Recurrence after Hepatic Resection or Liver Transplantation in Hepatocellular Carcinoma Patients.Duda DG, Dima SO, Cucu D, Sorop A, Klein S, Ancukiewicz M, Kitahara S, Iacob S, Bacalbasa N, Tomescu D, Herlea V, Tanase C, Croitoru A, Popescu I.Cancers (Basel). 2020 18;12(5):1275, **IF: 6.126** PMID: 32443546.
3. Perioperative omega-3 fatty acids fail to confer protection in liver surgery: Results of a multicentric, double-blind, randomized controlled trial.Linecker M, Botea F, Aristotele Raptis D, Nicolaescu D, Limani P, Alikhanov R, Kim P, Wirsching A, Kron P, Schneider MA, Tschuor C, Kambakamba P, Oberkofler C, De Oliveira ML, Bonvini J, Efanov M, Graf R, Petrowsky H, Khatkov I, Clavien PA, Popescu I.J Hepatol. 2020 Mar;72(3):498-505. **IF: 20.582** PMID: 31626819
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7. Regorafenib combined with PD1 blockade increases CD8 T-cell infiltration by inducing CXCL10 expression in hepatocellular carcinoma. Shigeta K, Matsui A, Kikuchi H, Klein S, Mamessier E, Chen IX, Aoki S, Kitahara S, Inoue K, Shigeta A, Hato T, Ramjiawan RR, Staiculescu D, Zopf D, Fiebig L, Hobbs GS, Quaas A, Dima S, **Popescu I**, Huang P, Munn LL, Cobbold M, Goyal L, Zhu AX, Jain RK, Duda DG.J Immunother Cancer. 2020 Nov;8(2):e001435.IF: .PMID: 33234602

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Carti

Pandemia Covid-19 in Romania. Aspecte clinice si epidemiologice

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Prof Dr Dragos VINEREANU,
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Raport de activitate 2020

A. Articole publicate (autor principal sau co-autor) in reviste de specialitate de circulatie internationala cotate ISI (cu Factor de Impact): 25

1. Baldea SM, Velcea AE, Rimbas RC, Andronic A, Matei L, Calin SI, Muraru D, Badano LP, **Vinereanu D**. 3-D Echocardiography Is Feasible and More Reproducible than 2-D Echocardiography for In-Training Echocardiographers in Follow-up of Patients with Heart Failure with Reduced Ejection Fraction. *Ultrasound Med Biol*. 2020 Nov 29;S0301-5629(20)30485-3. doi: 10.1016/j.ultrasmedbio.2020.10.022.
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 19. Rimbaş RC, Mihăilă-Baldea S, Magda LŞ, Vişoiu SI, Muraru D, **Vinereanu D**. New Myocardial Deformation by 2D Multi-layer Speckle-Tracking Analysis in Healthy Patients: Normal Reference Values and Their Physiologic Determinants. *Ultrasound Med Biol*. 2020 Mar;46(3):818-827. doi: 10.1016/j.ultrasmedbio.2019.12.001.
 20. Solomon SD, Vaduganathan M, L Claggett B, Packer M, Zile M, Swedberg K, Rouleau J, A Pfeffer M, Desai A, Lund LH, Kober L, Anand I, Sweitzer N, Linssen G, Merkely B, Luis Arango J, **Vinereanu D**, Chen CH, Senni M, Sibulo A, Boytsov S, Shi V, Rizkala A, Lefkowitz M, McMurray JJV. Sacubitril/Valsartan Across the Spectrum of Ejection Fraction in Heart Failure. *Circulation*. 2020 Feb 4;141(5):352-361. doi: 10.1161/CIRCULATIONAHA.119.044586.
 21. Lopes RD, Leonardi S, Wojdyla DM, Vora AN, Thomas L, Storey RF, **Vinereanu D**, Granger CB, Goodman SG, Aronson R, Windecker S, Thiele H, Valgimigli M, Mehran R, Alexander JH. Stent Thrombosis in Patients With Atrial Fibrillation Undergoing Coronary Stenting in the AUGUSTUS Trial. *Circulation*. 2020 Mar 3;141(9):781-783. doi: 10.1161/CIRCULATIONAHA.119.044584.
 22. Suran MC, Margulescu AD, Bruja R, Siliste C, **Vinereanu D**. Surface ECG criteria can discriminate post-septal pacing cardiac memory from ischemic T wave inversions. *J Electrocardiol*. 2020 Jan-Feb;58:10-17. doi: 10.1016/j.jelectrocard.2019.10.004.

23. Uejima T, Dunstan FD, Arbustini E, Łoboz-Grudzi n K, Hughes AD, Carerj S, Favalli V, Antonini-Canterin F, Vriz O, **Vinoreanu D**, Zamorano JL, Popescu BA, Evangelista A, Lancellotti P, Lefth riotis G, Kozakova M, Palombo C, Fraser AG; E-Tracking International Collaboration Group (ETIC). Age-specific reference values for carotid arterial stiffness estimated by ultrasonic wall tracking. *J Hum Hypertens*. 2020 Mar;34(3):214-222. doi: 10.1038/s41371-019-0228-5. Epub 2019 Aug 21. Erratum in: *J Hum Hypertens*. 2020 Jan 30.
24. Manganaro R, Marchetta S, Dulgheru R, Sugimoto T, Tsugu T, Ilardi F, Cicienia M, Ancion A, Postolache A, Martinez C, Kacharava G, Athanassopoulos GD, Barone D, Baroni M, Cardim N, Hagendorff A, Hristova K, Lopez T, de la Morena G, Popescu BA, Penicka M, Ozyigit T, Rodrigo Carbonero JD, van de Veire N, Von Bardeleben RS, **Vinoreanu D**, Zamorano JL, Rosca M, Calin A, Moonen M, Magne J, Cosyns B, Galli E, Donal E, Carerj S, Zito C, Santoro C, Galderisi M, Badano LP, Lang RM, Lancellotti P. Correlation between non-invasive myocardial work indices and main parameters of systolic and diastolic function: results from the EACVI NORRE study. *Eur Heart J Cardiovasc Imaging*. 2020 May 1;21(5):533-541. doi: 10.1093/ehjci/jez203.
25. **Vinoreanu D**, Spinar J, Pathak A, Kozłowski D. Role of Metoprolol Succinate in the Treatment of Heart Failure and Atrial Fibrillation: A Systematic Review. *Am J Ther*. 2020 Mar/Apr;27(2):e183-e193. doi: 10.1097/MJT.0000000000001043.

B. Carti si capitole in carti de specialitate: 1

Coordonator „Actualitati in Cardiologie”, Editia 2019, editura Mediamed Publicis.

C. Activitati de formare tineri cercetatori:

1. Doctoranzi acceptati in 2020: 1

D. Granturi/proiecte castigate/derulate in 2020: 4 + 13 = 18

1. 2018-2020: “Dezvoltarea de BIONanotehnologii bazate pe Veziculele Extracelulare, aplicabile  n diagnosticul precoce, prognosticul  i terapia bolii Aterosclerotice (BIOVEA)”, PN-III-P1-1.2-PCCDI2017-0527, contract 83/PCCDI 2018, responsabil partener UMF Carol Davila: Prof Dr Dragos Vinoreanu.
2. 2018-2021: “ intirea mecanismelor imunit tii inn scute pentru o mai bun  stratificare a riscului  i identificarea de noi op iuni terapeutice in infarctul de miocard (INNATE)”, PN-III-P4-ID-PCCF-2016-0172, contract nr 5/2018, responsabil partener UMF Carol Davila: Prof Dr Dragos Vinoreanu.
3. 2018-2020: “Integrated Applied Genetic Traing”, Iceland, Liechtenstein, Norway Grants (coordonator: Dr. Ing. Elena Poenaru; mebru in echipa proiect);
4. 2014-2020: “Dezvoltarea infrastructurii publice de cercetare, dezvoltare si crearea de noi infrastructuri”, co-finantat prin intermediul Programului Operational Sectorial ”Cresterea Competitivitatii Economice”, Axa Prioritara 2: Cercetare, dezvoltare tehnologica si inovare pentru competitivitate, Operatiunea 2.2.1.: Dezvoltarea infrastructurii C-D existente si crearea de noi infrastructuri C-D (coordonator: Prof Dr Radu Deac; responsabil teme 2 si 3: Prof Dr Dragos Vinoreanu).

NB. Se adauga 13 studii multicentrice internationale, la care sunt membru in Steering Committee.

E. Onoruri, cooperari stiintifice internationale:

1. 2017-: Member of the U.S. Department of State's Global Alumni Network

F. Conferinte sustinute in 2020:

1. In strainatate: 5
2. In tara: 24

G. Citari Web of Science Core Collection in 2020: 890

H. Cea mai importanta lucrare aparuta in 2020:

Teerlink JR, Diaz R, Felker GM, McMurray JJV, Metra M, Solomon SD, Adams KF, Anand I, Arias-Mendoza A, Biering-Sørensen T, Böhm M, Bonderman D, Cleland JGF, Corbalan R, Crespo-Leiro MG, Dahlström U, Echeverria LE, Fang JC, Filippatos G, Fonseca C, Goncalvesova E, Goudev AR, Howlett JG, Lanfear DE, Li J, Lund M, Macdonald P, Mareev V, Momomura SI, O'Meara E, Parkhomenko A, Ponikowski P, Ramires FJA, Serpytis P, Sliwa K, Spinar J, Suter TM, Tomcsanyi J, Vandekerckhove H, **Vinereanu D**, Voors AA, Yilmaz MB, Zannad F, Sharpsten L, Legg JC, Varin C, Honarpour N, Abbasi SA, Malik FI, Kurtz CE; GALACTIC-HF Investigators. Cardiac Myosin Activation with Omecamtiv Mecarbil in Systolic Heart Failure. **N Engl J Med.** 2020 Nov 13. doi: 10.1056/NEJMoa2025797.



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CENTRUL DE CERCETĂRI BIOMEDICALE

RAPORT DE ACTIVITATE – 2020

PROF. DR. CAROL STANCIU

Articole ISI: 11

Articole BDI: 4

Proceedings: 4

Prezentări orale la manifestări științifice: 4

Articole publicate în suplimente la reviste cotate ISI: 9

Postere manifestări naționale/internaționale: 11

Cărți și capitole în cărți/reviste publicate: 2

Cărți și capitole în cărți publicate în ultimii cinci ani autor/co-autor (selecție): 19

ARTICOLE ISI:

1. Ungaro RC, Yzet C, ...**Stanciu C**, ...Petralia F, Colombel JF. Deep Remission at 1 Year Prevents Progression of Early Crohn's Disease. *Gastroenterology*, 2020, 159(1), 139-147. doi: 10.1053/j.gastro.2020.03.039. Epub 2020 Mar 26. PMID: 32224129, **IF 17.373**

2. Mihai F, Trifan A, **Stanciu C**, Singeap AM, Cucuteanu B, Lupascu Ursulescu C, Pop C, Girleanu I, Cuciureanu T, Negru D, Cojocariu C. Liver Remodeling on CT Examination in Patients with HCV Compensated Cirrhosis Who Achieved Sustained Virological Response after Direct-Acting Antivirals Treatment. *Medicina (Kaunas)*, 2020 Apr 10,56(4). pii: E171. doi: 10.3390/medicina56040171. PMID: 32290305, **IF 1.205**
3. Sfarti C, Ciobica A, Balmus IM, Ilie OD, Trifan A, Petrea O, Cojocariu C, Gîrleanu I, Sîngeap AM, **Stanciu C**. Systemic Oxidative Stress Markers in Cirrhotic Patients with Hepatic Encephalopathy: Possible Connections with Systemic Ammoniemia. *Medicina (Kaunas)*, 2020 Apr 23,56(4). pii: E196. doi: 10.3390/medicina56040196. PMID: 32340177, **IF 1.205**
4. Balmus IM, Ilie DO, Ciobica A, Cojocariu RO, **Stanciu C**, Trifan A, Cimpeanu M, Cimpeanu C, Gorgan L. Irritable Bowel Syndrome between Molecular Approach and Clinical Expertise- Searching for Gap Fillers in the Oxidative Stress Way of Thinking. *Medicina (Kaunas)*, 2020 Jan 19,56(1). pii: E38. doi: 10.3390/medicina56010038. Review. PMID: 31963795, **IF 1.205**
5. Lefter R, Ciobica A, Timofte D, **Stanciu C**, Trifan A. A Descriptive Review on the Prevalence of Gastrointestinal Disturbances and Their Multiple Associations in Autism Spectrum Disorder. *Medicina (Kaunas)*, 2019, Dec, 27,56(1). pii: E11. doi: 10.3390/medicina56010011, **IF 1.205**
6. Singeap AM, Cojocariu C, Girleanu I, Huiban L, Sfarti C, Cuciureanu T, Chiriac S, **Stanciu C**, Trifan A. Clinical Impact of Small Bowel Capsule Endoscopy in Obscure Gastrointestinal Bleeding. *Medicina (Kaunas)*, 2020, Oct, 19,56(10),E548. doi: 10.3390/medicina56100548. PMID: 33086531, **IF 1.205**
7. Gheorghe LS, Preda C, Iliescu L, Istratescu D, Chifulescu AE, Pop CS, Trifan A, **Stanciu C**, Diculescu M, Voiosu T, Baicus C, Tugui L, Iacob S, Tieranu C, Meianu C, Manuc M. Efficacy and Safety of Ledispavir/Sofosbuvir with or without Ribavirin in patients with Decompensated Liver Cirrhosis and Hepatitis C Infection: a Cohort Study. *J Gastrointestin Liver Dis.*, 2020, Sep, 9,29(3),385-390, doi: 10.15403/jgld-2448. PMID: 32919421, **IF 2.063**
8. Muzica CM, **Stanciu C**, Huiban L, Singeap AM, Sfarti C, Zenovia S, Cojocariu C, Trifan A. Hepatocellular carcinoma after direct-acting antiviral HCV therapy: A debate near the end. *World Journal of Gastroenterology* (in press), **IF 3.411**

9. Petrea OC, **Stanciu C**, Muzica CM, Sfarti CV, Cojocariu C, Girleanu I, Huiban L, Trifan A. Idiopathic cervical esophageal webs: A case report and literature review. *International Journal of General Medicine*. 2020 (in press), **IF 1.927**
10. Huiban L, **Stanciu C**, Sfarti C, Muzica C, Cuciureanu T, Zenovia S, Frunzuc G, Damian I, Trifan A. Micro-elimination of hepatitis C virus infection – the beginning to the end. *Journal of Gastroenterology and Liver Disease*. 2020 (in press), **IF 2.063**
11. Lefter R, Ciobica A, Timofte D, Ababei D, Dobrin R, Luca A, Trifan A, **Stanciu C**, Sfarti C. A new biological approach in generating an irritable bowel syndrome rat model -focusing on depression in sucrose splash test and body weight change. *Romanian Biotechnological Letters*, 2020, 25, 3, 1554-1562. doi: 10.26327/RBL2018.208. **IF 0.4**

ARTICOLE BDI:

1. Târcoveanu E, Vasilescu A, Lupașcu C, Vlad N, Moraru M, **Stanciu C**, Bejan V, Bradea C. Laparoscopic Cholecystectomy in Cirrhotic Patients. *Chirurgia (Bucur)*, 2020 Mar-Apr; 115(2), 213-219. doi: 10.21614/chirurgia.115.2.213
2. Trifan A, **Stanciu C**. Malnutrition, Sarcopenia and Frailty in Liver Cirrhosis. *Rev Med Chir Soc Med Nat Iasi*, 2020, 124(2):175-178
3. Muzîca CM, **Stanciu C**, Huiban L, Cuciureanu T, Sîngeap AM, Zenovia S, Chiriac S, Cojocariu C, Sfarti CV, Trifan A: Colonic tuberculosis versus Crohn's disease. Case report and review of the literature. *Rev Med Chir Soc Med Nat Iasi*, 2020, 124(3), 394-399
4. Balmus IM, Cojocariu R, Ciobica A, Cantemir A, Gălățanu C, **Stanciu C**, Trifan A, Gorgan L, Timofte D, Validation of romanian version of visual analogue scale for irritable bowel syndrome questionnaire (VAS-IBS). *Bulletin of Integrative Psychiatry*, 2020, 1, 84, 63-68.

PROCEEDINGS INDEXATE ISI:

1. Muzica CM, **Stanciu C**, Huiban L, Petrea O, Frunzuc G, Singeap AM, Trifan A. The distribution and features of colonic diverticula complicated with acute diverticulitis – single

tertiary center experience. *Proceedings of the Romanian Society of Neurogastroenterology*, 2019. Fillodiritto Editore – Proceedings, April 2020, 81-86.

2. Balmus IM, Ciobica A, Cojocariu R, Gorgan L, **Stanciu C**, Trifan A. Correlative Studies on the Biorelevance of Smoking in Gastrointestinal Irritable Bowel Syndrome-like Symptoms, *2019 E-Health And Bioengineering Conference (Ehb)*, Book Group Author(s):IEEE, Book Series: E-Health and Bioengineering Conference, Published in 2020, WOS:000558648300166, ISBN:978-1-7281-2603-6.

3. Balmus IM, Ciobica A, Cojocariu R, Gorgan L, **Stanciu C**, Trifan A. The Possible Biorelevance of Alcohol Consumption in some Gastrointestinal IBS-Like Symptoms - Correlative Studies Based on Surveying, *2019 E-Health And Bioengineering Conference (Ehb)*, Book Group Author(s):IEEE, Book Series: E-Health and Bioengineering Conference, Published in 2020, WOS: 000558648300046, ISBN:978-1-7281-2603-6.

4. Cojocariu R, Ciobica A, Balmus IM, Gorgan L, Padurariu M, **Stanciu C**, Trifan A, Some Mechanistical and Computational Aspects On The Correlations That Might Exist Between Irritable Bowel Syndrome Versus Sleep Patterns And Disturbances, *2019 E-Health And Bioengineering Conference (Ehb)*, Book Group Author(S):Ieee, Book Series: E-Health And Bioengineering Conference, Published in 2020, WOS: 000558648300109, ISBN:978-1-7281-2603-6.

LUCRĂRI PREZENTATE ORAL LA MANIFESTĂRI ȘTIINȚIFICE LOCALE, REGIONALE, NAȚIONALE, CU PARTICIPARE NAȚIONALĂ ȘI INTERNAȚIONALĂ (SELECTIE):

1. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. The prevalence of Ulcerative Colitis and Crohn's disease in North-Eastern Romania. The impact of the Covid-19 pandemic. *Al XII-lea Simpozion Național de Boli Inflammatorii Intestinale*, Bucuresti, 2020 - prezentare orală

2. Huiban L, **Stanciu C**, Trifan A. The prevalence of Ulcerative Colitis and Crohn's disease in North-Eastern Romania during Covid-19 pandemic. *Zilele Academiei Iesene*, Iasi, 2020 - prezentare orală

3. Huiban L, **Stanciu C**, Trifan A. Peritonita bacteriană spontană. Actualități de diagnostic și tratament. *Școala de Vară de Gastroenterologie și Hepatologie*, Iași, 2020- prezentare orală
4. Huiban L, Girleanu I, **Stanciu C**, Trifan A. Profilaxia infecțiilor la pacientul cirotic- intre risc si beneficiu. *Școala de Vară de Gastroenterologie și Hepatologie*, Iași, 2020- prezentare orală

LUCRĂRI PUBLICATE ÎN SUPLIMENTE LA REVISTE COTATE ISI:

1. Girleanu I, Trifan A, ... , Cuciureanu T, **Stanciu C**. Natural course and clinical outcomes in patients with transient portal vein thrombosis and liver cirrhosis. Chron's and Colitis Congres May 2020, *Gastroenterology*, 2020, 158 (6), S1461- S1461, Suppl. 1, Meeting Abstract: Tu1704, **IF – 17.373**
2. Leahu A, Cojocariu C, Sahawneh DM, Girleanu I, Stoica O, **Stanciu C**, Trifan A. The Glomerular Filtration Rate in Liver Cirrhosis Implications in Clinical Practice. Chron's and Colitis Congres, May 2020, *Gastroenterology*, 2020, 158,(6), S92-S92, Suppl. 1, Meeting Abstract: 447, **IF – 17.373**
3. Ungaro RC, Jordan R, ..., **Stanciu C**,..., Halfvarson J, Colombel JF. CDEIS Score of 2 is Optimal Cut-off Associated with Lower Risk of Disease Progression in Early Crohn's Disease: Data from the CALM Study. Crohn's and Colitis Congress, May 2020, *Gastroenterology* 2020, 158(6),S699-S699, Suppl. 1, Meeting Abstract: Su1912, <https://doi.org/10.1093/ecco-jcc/jjz203.369>, **IF – 17.373**
4. Zenovia S, Singeap AM, ..., **Stanciu C**, Trifan A. Vibration-controlled transient elastography to diagnose steatosis and fibrosis in obese patients with nonalcoholic fatty liver disease. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.
5. Cuciureanu T, Huiban L, ..., **Stanciu C**, Trifan A. Chronic hepatitis C virus infection and the impact of neuropsychiatric extrahepatic manifestation on the quality of life of the patients treated with interferon-free regimens. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.

6. Neculae E, Singeap AM, ..., **Stanciu C**, Trifan A. The leading risk factor for hepatocellular carcinoma, just like a decade ago. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.
7. Neculae E, Singeap AM, ..., **Stanciu C**, Trifan A. Rare cause of tumor induced acute pancreatitis-case presentation. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.
8. Stefan Chiriac, **Carol Stanciu**, ..., Zenovia S, Trifan A. Prognostic value of neutrophil-to-lymphocyte ratio in cirrhotic patients with acute-on-chronic liver failure. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.
9. Chiriac S, **Stanciu C**, ..., Zenovia S, Trifan A. The role of ammonia in predicting the outcome of patients with acute-on-chronic liver failure. Cel de-al XL-lea Congres Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă, *Journal of Gastrointestinal and Liver Disease*, 2020.

POSTERE MANIFESTĂRI NAȚIONALE / INTERNAȚIONALE:

1. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. The prevalence of ulcerative colitis and Crohn's disease in north-eastern Romania - The impact of the covid-19 pandemic. *Al XII-lea Simpozion Național de Boli Inflamatorii Intestinale*, Bucuresti, 2020
2. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. Anemia and iron deficiency in inflammatory bowel disease - a real life study. *Al XII-lea Simpozion Național de Boli Inflamatorii Intestinale*, Bucuresti, 2020
3. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. Therapy experiences among patients with inflammatory bowel disease-related iron deficiency anemia. *Al XII-lea Simpozion Național de Boli Inflamatorii Intestinale*, Bucuresti, 2020
4. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. Predictive factors for bleeding events in patients with hepatitis c virus liver cirrhosis treated with direct acting antivirals. *Al XIII-lea*

Congres Național al Societății Române de Fiziologie, de la celulă la pacient ... Și înapoi la celulă, Targu Mures, 2020

5. Huiban L, **Stanciu C**, ... , Cojocariu C, Trifan A. Spontaneous seroreversion of anti-hepatitis C virus during the natural course of hepatitis C virus infection in the patients evaluated for treatment - a single center experience. *Al XIII-lea Congres Național al Societății Române de Fiziologie, de la celulă la pacient ... Și înapoi la celulă*, Targu Mures, 2020

6. Zenovia S, Singeap AM, ..., **Stanciu C**, Trifan A. Non-alcoholic fatty liver disease in type 2 diabetes mellitus. *Paris NASH Meeting*, Paris, 2020

7. Trifan A, Singeap AM,.... Zenovia S, **Stanciu C**. Metabolic associated fatty liver disease among patients with non-alcoholic fatty liver disease. *Paris NASH Meeting*, Paris, 2020

8. Muzica C, **Stanciu C**, ... , Chiriac S, Trifan A. Efficacy and predictive value of the new endoscopic classification DICA (diverticular inflammation and complication assessment). *Al X-lea Congres Național al Societății Române de Coloproctologie*, București, 2020.

9. Cuciureanu T, Huiban L, ..., **Stanciu C**, Trifan A. Inflammatory bowel disease-demographic and clinical characteristics in hospitalized patients: a retrospective study in a emergency hospital in North-East Romania. *Al X-lea Congres Național al Societății Române de Coloproctologie*, București, 2020.

10. Galatanu I, **Stanciu C**, ... , Cuciureanu T, Trifan A. Anemia and iron deficiency in inflammatory bowel disease. *Al X-lea Congres Național al Societății Române de Coloproctologie*, București, 2020.

11. Zenovia S, **Stanciu C**, ..., Petrea O, Trifan A. Lean non-alcoholic fatty liver disease assessment in inflammatory bowel disease using ultrasound and FIB-4 index. *Al X-lea Congres Național al Societății Române de Coloproctologie*, București, 2020.

CĂRȚI ȘI CAPITOLE ÎN CĂRȚI/REVISTE PUBLICATE:

1. Muzica C, Oproiu AI, **Stanciu C**, Trifan A. Cancerul hepatic la pacientul cu boală hepatică avansată VHC după răspunsul virusologic susținut. *Actualități în medicina internă*, Ed. Medicală, Bucuresti, 2020.
2. Trifan A, Sfarti C, **Stanciu C**, Cojocariu C. Betablocantele in ciroza hepatica decompensata. *Gastroenterologie*, 2020, Metode moderne de diagnostic și tratament. *Viața Medicală*, Editura Medichub Media, București, 2020.

CĂRȚI SI CAPITOLE ÎN CĂRȚI PUBLICATE ÎN ULTIMII CINCI ANI AUTOR/CO-AUTOR (SELECȚIE):

1. Cojocariu C, Singeap AM , Chiriac S, Sfarti C, Girleanu I, Petrea O, Trifan A, **Stanciu C**. Gastrointestinal Manifestations of IgA Vasculitis-Henoch-Schönlein Purpura. *Digestive System - Recent Advances*, Edited by Xingshun Qi and Sam Koruth, 278 pages, Publisher: InTech, Chapters published June 24, 2019 IntechOpen, doi: 10.5772/intechopen.86966
2. **Stanciu C**, Trifan A, Prelipcean C, Balan G. *Noi concepte in gastroenterologie si hepatologie*, 2016, 414 pagini Ed. “Gr. T. Popa”, UMF, Iasi.
3. Sfarti C, Trifan A, **Stanciu C**. *Gastroenterologie și Hepatologie Clinică* sub redacția SRGH, 2018, Editura Medicală, București. Cap. Boala de reflux gastroesofagian. Esofagul Barrett, pg. 21-34.
4. Trifan A, **Stanciu C**, Vasilescu C. *Gastroenterologie și Hepatologie Clinică* sub redacția SRGH, 2018, Editura Medicală, București. Cap. Diverticuloza colonică, pg. 345-361.
5. Trifan A, **Stanciu C**. *Gastroenterologie și Hepatologie Clinică* sub redacția SRGH, 2018, Editura Medicală, București. Cap. Encefalopatia hepatică, pg. 676-691.
6. Trifan A, Cojocariu C, **Stanciu C**. *Gastroenterologie și Hepatologie Clinică* sub redacția SRGH, 2018, Editura Medicală, București. Cap. Stratificarea riscului, profilaxia primară, secundară și tratamentul hemoragiei digestive superioare variceale, pg. 692-701.

7. Cojocariu C, **Stanciu C**, Trifan A. *Gastroenterologie și Hepatologie Clinică* sub redacția SRGH, 2018, Editura Medicală, București. Cap. Sindromul hepatorenal, pg. 702-713.
8. **Stanciu C**, Trifan A. Note de curs-gastroenterologie, 2017, Editura „Gr. T. Popa”, format academic, 454 pagini.
9. Trifan A, **Stanciu C**, Girleanu I. *Portal vein thrombosis in patients with liver cirrhosis*, Editura In Tech 2017 sub redactia Georgios Tsoulfas, ISBN 978-953-51-3309-4, pag 155-172.
10. **Stanciu C**, Trifan A. *Note de curs Gastroenterologie*, Editura „Gr. T. Popa”, 2017 UMF, Iasi..
11. **Stanciu C**. Ce se întâmplă după vindecarea virusologică în hepatita cronică virală C? În : *Actualități în medicina internă*, sub redacția C. Gherasim, Al. Oproiu, Editura Medicală, București, 2017, pg. 337-386.
12. Sfarti C, Cojocariu C, Singeap AM, Savlovschi D, **Stanciu C**, Girleanu I, Chiriac S, Trifan A. Impactul manometriei de inalta rezolutie in managementul acalaziei cardiei, in *Noi concepte in gastroenterologie si hepatologie* sub redactia: Carol Stanciu, Anca Trifan, Cristina Cijevschi, Gheorghe Balan, Ed. “Gr. T. Popa”, 2016, ISBN 978-606-544-430-0, pg 15.
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PROF. CAROL STANCIU

RAPORT DE ACTIVITATE PENTRU ANUL 2020

Prof. Dr. ACALOVSKI MONICA VOICHITA

Membru Corespondent al Academiei Române (din 2016)

Citări în 2020

74 în Clarivate Analytics (WoS) h index - 17
163 în Google Scholar h index - 22 i10 index - 39

Articole publicate

Monica Acalovski, Wolfram Zoller. Etablierung deutsch-rumänischer Symposien von Gastroenterologie und Hepatologie seit 2012. *Zschr Gastroenterol* 2020; 58; 1147-1148 Factor de impact = **1.338**

Milaciu MV, Vesa ȘC, Bocșan IC, Ciumărnean L, Sâmpolean D, Negrean V, Pop RM, Matei DM, Pașca S, Răchișan AL, Buzoianu AD, **Acalovski M**. Paraoxonase-1 Serum Concentration and *PON1* Gene Polymorphisms: Relationship with Non-Alcoholic Fatty Liver Disease. *J Clin Med*. 2019 Dec 13;8(12):2200. doi: 10.3390/jcm8122200. Factor de impact = **3.303**

Capitole de cărți

Editarea în România a unui jurnal medical cu factor de impact: experiența jurnalului de gastroenterologie și hepatologie (*Journal of Gastrointestinal and Liver Diseases*), în volumul *Academia Română. File din istoria medicinei românești*, coordonatori Victor Voicu, Irinel Popescu, Ed. Academiei Române, 2020, pg. 431-438

Membru în Comitete Editoriale

Honorary Founding Editor – *J Gastrointestinal Liver Dis FI 2,351 în Clarivate Analytics, cel mai mare FI între jurnalele românești*

Honorary Board Adviser – *Medicine and Pharmacy Reports, UMF Cluj-Napoca*

Membru în International Advisory Board – *Central European Journal of Gastroenterology and Hepatology*

Membru în comisii profesionale naționale

Vicepreședinte al Comisiei de Gastroenterologie a Ministerului Sănătății

Membru în Comitetul Director al Societății Române de Gastroenterologie și Hepatologie

Manifestări științifice naționale și internaționale

Co-președinte al Comitetului Științific, al 7-lea Simpozion Româno-German de Gastroenterologie (7th German-Romanian Symposium of Gastroenterology, www.r7g.ro), Brasov, Romania (14 mai 2020) – anulat în aprilie 2020, reprogramat pentru iunie 2021

Membru în comitetul științific de organizare, titular de curs și masa rotundă, al 40-lea Congresul Național de Gastroenterologie, Hepatologie și Endoscopie Digestivă (Mamaia, 21-23 mai 2020) - anulat în aprilie 2020, reprogramat pentru mai 2021

Îndrumător științific de doctorat

O teză de doctorat susținută (iulie 2020): doctorand Mircea Milaciu.

Activități didactice

Titular cursul *Norme de publicare și etica publicării științifice*, Școala Doctorală UMF Cluj, 2019-2020, 2020-2021