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March
2020

Wherever the art of medicine is loved, there is
also a love of humanity.
- Hippocrates

Sushruta Medical News

A Medical Newsletter of the

American Association of Physicians of Indian Origin

Editorial Desk

Welcome to the Sushruta Medical News

Ancient India had a very rich medical science, which was unparalleled in the annals of the history of medicine. More than 300 years before the rise of Hippocrates in Egypt, the Indian Physician and Surgeon, Sushruta did rhinoplasty in Varanasi, on the banks of the sacred river Ganges. Although well-known for his technique of rhinoplasty, the basic principles of which have not changed over the millennia, Sushruta was also a great physician and pathophysiologist. He recognized that obesity is a disease and connected it to the development of diabetes mellitus and heart diseases. He even advised exercise for the prevention of these conditions.

That was more than 2,500 years ago, when there were only a few physicians in India. But today, physicians of Indian heritage are about 1.2 million worldwide, the largest for any ethnic group. Most of them excelled in their professions, be it clinical practice, healthcare, academia, administration and industry all over the world. However, the potential of their collective strength and synergy has not been fully realized yet. When that is realized, the global Indian Physician Community will be like a well-organized and powerful army to meet the demands of the 21st century world.

AAPI, as the leading organization for the Indian Physicians outside India has been the dynamo of this force driving the change and synergy through its work in the United States, India and other countries, and thus it is preparing itself to address the global healthcare issues. As part of those efforts, AAPI has initiated several projects, and has been conducting Global Healthcare Summits (GHS), and various awareness campaigns, such as the Obesity Awareness Campaigns. In the coming years, all these projects and campaigns are bound to spread all over the world like wildfire from Alberta to Antarctica and Seoul to Honolulu.

While the Conventions and GHS provide a snapshot of AAPI activities to the attendees, there is an unmet need for a medical journal to enhance its professional and academic outlook and presentation to the larger section of the world through the worldwide web, as well as for its own growth as a professional organization, as per its vision and mission. So, the current Executive Committee of the AAPI under the dynamic leadership of Dr. Suresh Reddy initiated the project of *Sushruta Medical News* to usher an academic breeze into the AAPI. This was announced in the AAPI Governing Body meeting in the Long Island, NY on February 8, 2020. We were requested to prepare the groundwork for that, which resulted in this inaugural issue. It is envisioned that this *Sushruta Medical News* will eventually be nurtured to grow into a peer-reviewed *AAPI Medical Journal* during the leadership of Dr. Sudhakar Jonnalagadda.

On behalf of AAPI, we invite all those who are interested in the development of the AAPI Medical Journal to join hands with us by contributing their articles (see Call for the Contributors section below), and share your thoughts and suggestions freely with us. We are particularly looking for participation of the members of YPS and MSRF on whom the future of the AAPI rests. Those who actively support the *Sushruta Medical News* will be inducted into the Editorial Board of the future AAPI Medical Journal, which will be a peer-reviewed professional journal indexed in the PubMed and other databases. Eventually, the *Sushruta Medical News* will become a section of the AAPI Medical Journal. Thus, the path to the AAPI Medical Journal is transparent, open and objective.

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Call for Contributors

The **Sushruta Medical News**, which will pave the way for a peer-reviewed **AAPI Medical Journal** will have the following categories of articles. Potential contributors are welcome to submit their works by emailing to one of the editors. Please enclose a portrait photo with your article along with your qualifications, city and state and email ID.

- **A Piece of My Mind** (an opinion on current day medical and healthcare topics - 400 words)
- **Bench-to-Bedside** (250 words)
- **Bedside-to-Bench** (250 words)
- **Clinical Dilemma** (300 words)
- **Medical Education** (400 words)
- **Pictorial Case Report** (quarter page)
- **Pictorial CME** (quarter page)
- **Medical Quiz** (250 words)
- **YPS & MSRF Lounge** (500 words)
- **AAPI Obesity Awareness Campaigns** (300 words)
- **Veterans Health News** (300 words)

Email contributions to: smn@aapiusa.org

Bench-to-Bedside

Raman Spectroscopy in Modern Medicine

Contributed by: **B. K. Kishore, M.D.**

When Sir C. V. Raman earned Nobel Prize in Physics in 1930 for his Raman Effect, he hardly spent one hundred rupees for his home built spectroscope. That is about 9,000 rupees in today's currency. But with that small amount Dr. C. V. Raman made a ground breaking discovery which shaped modern physics, chemistry, biology and space travel among others. With the rapid developments in lasers, CCD cameras, computer processing etc., Raman Spectroscopy is finding increasing number of biomedical and clinical applications in the recent years. Here are a couple of such developments.

Clinical Instrumentation and Applications of Raman Spectroscopy

Isaac Pence and Anita Mahadevan-Jansen

[Chem Soc Rev. 2016 Mar 29; 45\(7\): 1958-1979.](#)

While a few optical technologies have achieved the status of medical instruments, many remain in the research and development phase despite persistent efforts by many researchers in the translation of these methods for clinical care. Of these, Raman spectroscopy has been described as a sensitive method that can provide biochemical information about tissue state while maintaining the capability of delivering this information in real-time, non-invasively, and in an automated manner. This review presents the various instrumentation considerations relevant to the clinical implementation of Raman spectroscopy and reviews a subset of interesting applications that have successfully demonstrated the efficacy of this technique for clinical diagnostics and monitoring in large ($n \geq 50$) in vivo human studies.

Samsung says it has a new way to monitor glucose levels without pricking a finger

<https://www.cnet.com/google-amp/news/samsung-says-it-has-a-new-way-to-monitor-glucose-levels-without-pricking-a-finger/>

Using a technique known as "Raman Spectroscopy" the team, which included researchers at Samsung's Advanced Institute of Technology (SAIT), Samsung Electronics as well as Massachusetts Institute of Technology, created a system that "utilizes lasers for chemical composition identification." Adjusting this system enabled "the direct observation of glucose Raman peaks," with Samsung adding that the group "demonstrated one of the highest prediction accuracies among non-invasive technologies."

Nature.com Collection of Key Advances in Medicine 2019

<https://www.nature.com/collections/nswglzqrbp>

The Key Advances in Medicine 2019 collection, a product from the eight clinical Nature Reviews journals, features 43 'Year in Review' articles that distil the major developments in 2018 and outline emerging trends to watch for in 2019. The Key Advances in Medicine 2019 collection is also individually organized into separate collections according to the eight clinical Nature Reviews disciplines. These are: Cardiology, Clinical Oncology, Endocrinology, Gastroenterology and Hepatology, Nephrology, Neurology, Rheumatology and Urology.

Desi Doctores Anguli

In this "Desi Doctors Corner" we publish details of a selected publications by Desi Doctors in top-of-the-line medical journals, such as JAMA, NEJM, BMJ and The Lancet published within the last one to three months. The selection criteria is based on the wider interest to the readers of the Sushruta Medical Journal. We also welcome your own publications if they are recent, i.e., less than one year.

Predictive Accuracy of a Polygenic Risk Score Compared with a Clinical Risk Score for Incident Coronary Heart Disease

Jonathan D. Mosley, Deepak K. Gupta, Jingyi Tan, Jie Yao, Quinn S. Wells, Christian M. Shaffer, Suman Kundu, Cassianne Robinson-Cohen, Bruce M. Psaty, Stephen S. Rich, Wendy S. Post, Xiuqing Guo, Jerome I. Rotter, Dan M. Roden, Robert E. Gerszten, Thomas J. Wang

Journal of the American Medical Association 323(7):627-635, 2020

<https://jamanetwork.com/journals/jama/article-abstract/2761086>

Conclusions and Relevance: In this analysis of 2 cohorts of US adults, the polygenic risk score was associated with incident coronary heart disease events but did not significantly improve discrimination, calibration, or risk reclassification compared with conventional predictors. These findings suggest that a polygenic risk score may not enhance risk prediction in a general, white middle-aged population.

Deep Learning for Prediction of Colorectal Cancer Outcomes: A Discovery and Validation Study

Skrede OJ, De Raedt S, Kleppe A, Hveem TS, Liestøl K, Maddison J, Askautrud HA, Pradhan M, Nesheim JA, Albrechtsen F, Farstad IN, Domingo E, Church DN, Nesbakken A, Shepherd NA, Tomlinson I, Kerr R, Novelli M, Kerr DJ, Danielsen HE

Lancet 395(10221):350-360, 2020

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)32998-8/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)32998-8/fulltext)

Interpretation: A clinically useful prognostic marker was developed using deep learning allied to digital scanning of conventional haematoxylin and eosin stained tumour tissue sections. The assay has been extensively evaluated in large, independent patient populations, correlates with and outperforms established molecular and morphological prognostic markers, and gives consistent results across tumour and nodal stage. The biomarker stratified stage II and III patients into sufficiently distinct prognostic groups that potentially could be used to guide selection of adjuvant treatment by avoiding therapy in very low risk groups and identifying patients who would benefit from more intensive treatment regimes.

A Community-based Intervention for Managing Hypertension in Rural South Asia

Tazeen H. Jafar, Mihir Gandhi, H. Asita de Silva, Imtiaz Jehan, Aliya Naheed, Eric A. Finkelstein, Elizabeth L. Turner, Donald Morisky, Anuradhani Kasturiratne, Aamir H. Khan, John D. Clemens, Shah Ebrahim, Pryseley N. Assam, and Liang Feng, for the COBRA-BPS Study Group

N Engl J Med 382:717-726, 2020

<https://www.nejm.org/doi/full/10.1056/NEJMoa1911965>

Conclusions: In rural communities in Bangladesh, Pakistan, and Sri Lanka, a multicomponent intervention that was centered on proactive home visits by trained government community health workers who were linked with existing public health care infrastructure led to a greater reduction in blood pressure than usual care among adults with hypertension.



Dr. Branden J. Garcia

Current Health Issues

CT Findings and Brief Overview of the Coronavirus (COVID-19)

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Dr. Atul K. Gupta

Introduction : Coronaviruses are zoonotic viruses capable of causing a wide range of pulmonary diseases. The Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV) are well-recognized variants of coronavirus. A novel coronavirus (nCoV) has recently emerged causing a worldwide epidemic. The World Health Organization recognized nCoV in February 2020 and redesignated as COVID-19 (Coronavirus 2019). Signs of infection include fever, cough, tachypnea and dyspnea. Severe cases can result in fulminant pneumonia, severe acute respiratory syndrome and even death. Some have reported gastrointestinal symptoms. As the virus continues to become widespread, it is increasingly important clinicians become familiar with the symptoms and radiographic findings of COVID-19 to allow for early detection and treatment.

Symptomatology and Radiographic Overview: The symptomatology of COVID-19 was described in a recent study performed in Wuhan, China. The study evaluated 138 patients with confirmed COVID-19. Nearly all reported fever, 59% with dry cough, 35% with myalgia, and 31% with dyspnea. Acute respiratory distress syndrome developed in 20% and mechanical ventilation was required in 12.3% of patients [1].

The radiographic findings of COVID-19 were initially described by a research group in Shanghai, China. They evaluated CT findings of 51 patients with COVID-19 confirmed by nucleic acid antibody testing. CT imaging demonstrated ground glass opacity in 77% of patients, ground glass opacity with interlobular septal thickening in 75% and ground glass opacity with consolidation in 59%. Over 80% of patients demonstrated bilateral parenchymal findings in a posterior and peripheral distribution. The detection of positive radiographic findings was greatest 5 or more days from the disease onset [2]. Furthermore, a separate study performed in Wuhan, China evaluated 21 patients with confirmed COVID-19 identifying 4 distinct radiographic stages of parenchymal lung involvement in CT. Stage 1, ranging from 0-4 days, demonstrating primary glass opacity. Stage 2, days 5-6, demonstrating ground glass opacity with interlobular septal thickening. During stage 3, days 9-13, consolidation was appreciated. Finally, at stage 4, days 14 and beyond, gradual resolution was observed [3].

Recent studies have also demonstrated CT may have increased sensitivity over laboratory testing for the initial diagnosis of COVID-19. In Changsha, China, researchers followed 5 patients with CT findings concerning for COVID-19 who presented with negative results on RT-PCR. After isolation for presumed COVID-19, all patients were eventually confirmed with repeated swab tests [4].

Conclusion: Current criteria for diagnosis of COVID-19 regard DNA analysis as the standard modality for detection. Due to limited supply and time-consuming nature of DNA tests and potential for false negative results, a more reliable modality is needed for definitive detection. The use of CT may be of benefit as there are recognized radiographic findings which are highly suggestive of COVID-19. Judicious use of CT can allow for early detection and treatment of those with high suspicion of COVID-19 even in settings in which DNA testing is not available or discordant with symptomatology.

Literature Cited:

1. Wang D, Hu D, Hu C et al. Clinical characteristics of 139 hospitalized patients with 2019 novel coronavirus infected pneumonia in Wuhan, China. JAMA Feb 7, 2020 <https://www.ncbi.nlm.nih.gov/pubmed/32031570>
2. Song F, Shi N, Shan F et al. Emerging coronavirus 2019-nCoV pneumonia. Radiology 2020 <https://pubs.rsna.org/doi/10.1148/radiol.2020200274>
3. Pan F, Ye T, Sun P et al. Time course of lung changes on chest CT during recovery from 2019 novel coronavirus (COVID-19) pneumonia. Radiology Feb 13, 2020 <https://pubs.rsna.org/doi/10.1148/radiol.2020200370>
4. Xie S, Zhong A, Zhao W et al. Chest CT for typical 2019 nCoV pneumonia; Relationship to negative RT-PCR testing. Radiology Feb 12, 2020 <https://pubs.rsna.org/doi/full/10.1148/radiol.2020200343>

In this section, called **Research from India**, we will present a few interesting research papers published in the **Journal of the Association of Physicians of India** during the past one year. The papers are selected based on their wider readership interest. These papers will provide a window of opportunity to know what studies are going on in Indian academic circles, and their key findings.

Resistant Hypertension in Clinical Practice in India: Jaipur Heart Watch

Rajeev Gupta, Krishna K. Sharma, Shubham Soni, Nishant Gupta, Raghubir S. Khedar

Journal of the Association of Physicians of India vol. 67, December 2019

http://www.japi.org/december_2019/02.html

Conclusion: Prevalence of resistant hypertension is high in a secondary care practice in India. It is significantly greater in older patients and women.

Prevalence of Hypertension among Urban Poor with and without Diabetes – A Study from South India

Anu Maria Jacob, A. Muruganatham, Majula Datta, Vijay Viswanathan

Journal of the Association of Physicians of India vol. 67, November 2019

http://www.japi.org/november_2019/008_oa_prevalence_of_hypertension.html

Conclusion: Prevalence of hypertension was found to be higher among the diabetic group compared to the non-diabetic group (48.8% vs. 42.6%), though the difference between the two is not very substantial. We therefore conclude that half of the urban poor are hypertensive even if they are not diabetic.

Assessment of Prognostic Factors and Natural History of Idiopathic Pulmonary Arterial Hypertension in Eastern India

Manisha Vinayak, Anupam Sharma, Dhurjati Prasad Sinha

Journal of the Association of Physicians of India vol. 67, October 2019

http://www.japi.org/october_2019/011_oa_assessment_of_prognostic.html

Conclusion: Idiopathic pulmonary arterial hypertension is associated with poor prognosis and survival despite advancement of disease-specific therapies. Higher mortality in our study is due to delayed presentation and diagnosis. Also lack of availability of prostacyclins and lung transplantation in advanced stages of disease contribute to higher mortality in Indian setup. Non-invasive echocardiographic factors and six minute walk distance are important prognostic factors that help in disease severity stratification to identify patients in need of intensive medical management.

Socio-demographic Profile of MDR-TB and XDR-TB Patients Admitted in DR-TB Center, North India

Om Prakash Giri, Vishal Prakash Giri, Nishant Nikhil

Journal of the Association of Physicians of India vol. 67, October 2019

http://www.japi.org/october_2019/012_oa_socio_demographic_profile.html

Conclusion: Drug Resistant Tuberculosis Control Programme should focus adequately on youth in state of Bihar.

A Cross-sectional Study on Learning Preferences for Research Methodology among Medical Students

Jian Meng Hoh, Harish Kumar, Lee Qao Shaun, Murugan Sellapan, Christiannie Celestinus Tay

Journal of the Association of Physicians of India, vol.67, December 2019

http://www.japi.org/december_2019/03.html

Conclusion: Unimodal with Auditory followed by Visual mode was preferred for learning "Research Methodology".

A Landmark Study in Which AAPI was Involved:



Journal of Diabetes and Its Complications 24 (2010) 145–153

JOURNAL OF
Diabetes
AND ITS
Complications
WWW.JDCJOURNAL.COM

Prevalence of diabetes, metabolic syndrome, and cardiovascular risk factors in US Asian Indians: results from a national study

Ranjita Misra^{a,*}, Thakor Patel^b, Purushotham Kotha^c, Annaswamy Raji^d, Om Ganda^e,
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Access Full Paper at: <https://www.sciencedirect.com/science/article/pii/S1056872709000026>

Conclusion: In conclusion, Asian Indians in the US have a strong predisposition for diabetes and heart disease. This, coupled with physical inactivity, abdominal obesity, and Westernized lifestyle after immigration, could contribute to early onset of chronic diseases. The results indicate a very high prevalence of DM and MetS among Asian Indians—one of the highest among US ethnic groups—with progressive worsening of all metabolic parameters in the spectrum from normoglycemic to IFG to DM. These data provide a firm basis for future mechanistic and interventional studies in this rapidly growing segment of the US population.

AAPI Obesity Awareness Campaign

Global Obesity Awareness Campaign in 2020



A Call to AAPI Members and Their Family and Friends All Over the World: Please organize Obesity Walkathons with yellow theme on May 25, 2020 in your cities (if not feasible, anytime until 10-10-2020). Choose a major monument or highlight of the city as location of the event and take group pictures there with AAPI banner/logo. Wear anything yellow. Yellow balloons are optional. Invite your City Mayor and local celebrities and make it a fun and educational event. Include your Non-Indian friends. Zumba dance is very popular. Give educational handouts on obesity including the 5210 concept: 5 servings of fruits and vegetables, 2 hours or less of recreational screen time, one hour or more of physical activity and zero sugary beverages. Please send photos and short description of event to AAPI office and uma.koduri@gmail.com

Uma Koduri, M.D., Chair, AAPI Obesity Committee