



World Congress on Infectious
Diseases & Antibiotics - 2018

BioGenesis

THE JOURNAL OF BIOLOGY AND MEDICINE

POST CONFERENCE REPORT





WORLD CONGRESS ON INFECTIOUS DISEASES AND ANTIBIOTICS 2018 HIGHLIGHTS:

The World Congress on Infectious Diseases and Antibiotics 2018 having theme "Global Impact on the Control, Treatment and Elimination of Infectious Diseases" organized by BioGenesis Health Cluster on 28th and 29th November 2018 at the J.N.TATA Auditorium, Indian Institute of Science, Bengaluru, Karnataka, India. This event attracted the world's leading experts along with more than 800 multidisciplinary scientists, clinicians, students, Research Scholars, Professor and public health experts eager to engage about issues in infectious diseases, clinical microbiology, and infection control and Antibiotics.

Attendees of this year's conference had access to hundreds of presentations and symposia and more than several hundred poster presentations, some of which that focus on antimicrobial stewardship and resistance are outlined below. Highlights of this year's conference were keynote addresses with topics on preparedness for epidemic influenza; SARS, MERS, and coronaviruses to come; virology and immunology; global action against antibiotic resistance; tolerance of microbes to antibiotics; treatment of extensively drug-resistant gram-negative infections; making sense of the microbiome; and the possibility of the elimination of tuberculosis. Additionally, the clinical results of several new antibiotics, immunotherapies, and microbiome strategies in development were presented. There was a noticeable increase in the number of symposiums and posters devoted to the increasing role of rapid diagnostics in antibiotic resistance surveillance, antimicrobial stewardship, and appropriate antibiotic prescribing.

A highly attended presentation was a keynote address given by Lt Gen D. Raghunath PVSM, AVSM, PHS (Retd), MD, DCP, FRCPath, FAMS, titled "Role of Educational campaigns to tackle Antimicrobial Resistance" Cars is a senior professor of infectious diseases at Principal Executive, Sir Dorabji Tata Centre for Research in Tropical Diseases, Indian Institute of Science Campus, Bangalore.

During his presentation, Lt Gen D. Raghunath described the importance of the development of collective global policies to manage the antibiotic resistance crisis. He highlighted that rapid point prevalence surveillance is important to understand the problem and make informed decisions on appropriate prescribing of antibiotics. In addition, understanding the fecal microbiome from individuals located throughout the world is key as multidrug resistance organisms are being isolated and are increasing. He called on the global community to better support developing countries, because many have action plans but lack appropriate support. In addition, the infrastructure for antibiotic discovery in academic and industry is broken and needs to be rebuilt, he said.

Lt Gen D. Raghunath highlighted the need for collaboration among drug developers and incentives from global organizations to support antibiotic development, noting that innovative partnerships to provide global access to antibiotics (old and new) should be the goal. He underscored the need to change fundamental behavioral approaches to the appropriate use of antibiotics, highlighting the role of antimicrobial stewardship and the need for targeted prescribing benchmarks specific to each country. Finally, he described the India Sustainable Development Goals as an opportunity to incorporate the policies, sustainable funding, and global action plan for combating antimicrobial resistance within a coordinated international legal framework to address the problem and to hold governments accountable.





SOME WORLD CONGRESS ON INFECTIOUS DISEASES AND ANTIBIOTICS 2018 ABSTRACT HIGHLIGHTS:

From Dr.Nibhri,

Senior Consultant & HOD, Department Biochemistry,
NayatiMedicity, Mathura.

Association of Complement System with and auto-immune inflammatory diseases and complications of falciparum malaria.

The complement system consisting of about 50 proteins is a pro-inflammatory system that gets activated by danger signals through antibody dependent and independent pathways. It is the first line of defense against invading pathogens and aggravates inflammation in chronic inflammatory disorders. Some of the complement proteins are polymorphic, well known for their genetic polymorphisms. Association of these polymorphisms with disease conditions had been evidenced. We have studied modulation of complement proteins especially complement regulatory proteins in relation to SLE and RA in humans and have also studied the significance of gene polymorphisms of Complement Receptor1 in association with the severe complications of falciparum malaria. Objective had been to assess on the importance of the system in selected diseases vis a vis in normal health. Patients and healthy volunteers from AIIMS, New Delhi or from the surrounding areas were enrolled for our studies with their informed consent, both retrospective and prospective studies were carried out as relevant. Standard protocols and techniques like real time PCR, PCR, Flowcytometry, nephelometry, immunoassays and gene counting were followed to assess the expression and levels of various parameters and gene polymorphism studies. The sample size was determined and data were analyzed in consultation with a statistician.

We observed reduced expression of membrane complement regulatory proteins in close association with the disease activity of SLE, RA. They also emerged as potential biomarkers and therapeutic targets for these diseases.

From DR. PR RAGHAVAN

CEO and Founder, NanorxInc, USA.

A one stop solution for Microbial infections with Metadichol

Metadichol (US Patent 8,722,093) is a Nano emulsion of long-chain alcohols found in many foods. It is commonly called Policosanol and is present in foods such as rice, sugar cane, wheat, and peanuts. Metadichol acts on Nuclear Vitamin D receptors (VDR) (US Patent 9,006,292) that are present in cells throughout the body to stimulate the immune system and inhibit a variety of disease processes, resulting from microbial infection. We tested inhibition activity of Metadichol against viruses, bacteria, fungi, parasites, yeast. It is active against over 40 varieties of microbes. In the in vitro assays, Metadichol showed no cytotoxicity and strongly inhibited cell death caused by each of the microbes tested. Mechanisms and gene expression studies and human case studies will be presented. Metadichol is a safe and effective inhibitor of microbes in humans. Since it is known to bind to the vitamin D receptor (VDR) (US Patent 9,006,292), its mechanism of action likely involves the competitive displacement of microbial particles from VDR's on host cell membranes. Because it consists of natural components of common foods and has no known negative side effects, Metadichol has the potential to serve as a novel, broad-spectrum antimicrobial agent against microbes that threaten mankind today.





SOME WORLD CONGRESS ON INFECTIOUS DISEASES AND ANTIBIOTICS 2018 ABSTRACT HIGHLIGHTS:

From, DR. MANMOHAN SINGH,

Community Medicine, Medical Director at THB, Postgraduate
Institute of Medical Education and Research, Chandigarh.

Are Fluoroquinolones Becoming Irrelevant in the Treatment of Enteric Fever?

An overall 560 (79.9%) samples were tested positive for *Salmonella typhi* and 141 (20.1%) for paratyphi A. In case of penicillins (Ampicillin and Amoxicillin), *Salmonella typhi* (>90%) was more sensitive than paratyphi (~80%). Among 4th generation cephalosporins, cefepime was highly effective against both. Third generation cephalosporins (Cefixime, Cefotaxime, Ceftazidime and Ceftriaxone) showed good coverage (>95%) against both *Salmonella typhi* and paratyphi. All fluoroquinolones (Ciprofloxacin, Levofloxacin and Nalidixic Acid) had very low coverage (<5%) for typhoid and paratyphoid bacilli. Chloramphenicol found to be very effective (>95% sensitivity) against both. All paratyphoid and ~96% of typhoid bacilli were sensitive to cotrimoxazole. Out of total 466 salmonella typhi samples (tested against 13 antibiotics), 88% were resistant to two or more antimicrobial agents. Out of 102 *Salmonella paratyphi* samples, 99% were resistant to two or more antibiotics. Multi-drug resistance status was evaluated by excluding Ciprofloxacin, Levofloxacin, and Nalidixic acid from analysis. Thus, a major proportion of *Salmonella typhi* (88.2%) showed no resistance against remaining antibiotics, while 7.1% showed resistance to two or more antibiotics. In case of *Salmonella paratyphi*, 65.7% showed no resistance to any of the antibiotics while 23.6% were resistant to two or more antibiotics.

The study has highlighted, how different classes of antibiotics are becoming irrelevant in the management of typhoid but at the same time, older conventional molecules are gaining momentum to be the preferred choices

From, DR. ANUJA CHOUHAN,

Dept. of Chemistry, Arni University, Himachal Pradesh.

NEED FOR NEW ANTIBIOTICS OR ALTERNATIVE SOLUTIONS ?

Recently for several years in mass media and in the scientific community there have been several reports regarding increase in antibiotic resistance even citing an inability to treat patients infected with multidrug-resistance bacteria (MDR) responsible for high mortality worldwide. The presentation discusses the key features associated with it, briefly. One of the largest class of antibiotics, Cephalosporin since its development, as superior alternative to penicillin, is divided into generations or subclasses which are grouped by chemical properties and subsequent generalised microbiological spectra. However, like all antibiotics, resistance identified in bacteria has led to newer generation cephalosporins (NGCs), latest being fifth generation cephalosporins. The rate of development of resistance in microbes for several antibiotics still does not reciprocate with the discovery of antibiotics. The alarming decrease in development of new antibiotics has reasons including elaborate drug trials, clinical preferences for narrow spectrum compounds, prolonged post marketing surveillance, hence the cost of development leading to pulling out of antibiotic research by pharma companies. Some of old antibiotics including chloramphenicol, clindamycin, clofazimine etc. have proven very effective in the treatment of "multi resistant" bacterial infections. In many cases the problem with these old antibiotics is their availability, since in an international study in 2012 found that among a panel of 33 essential antibiotics including older antibiotics only one third was available in half industrialised countries. The demand for effective antimicrobial compounds is growing rapidly. Therefore, it is desirable that pharmaceutical companies, small biotech concerns and many research institutes & academics increase their participation in a world wide effort for discovery of new antibiotics and alternative solutions.





SOME WORLD CONGRESS ON INFECTIOUS DISEASES AND ANTIBIOTICS 2018 ABSTRACT HIGHLIGHTS:

DR. HARISH GUGNANI,

Vallabhbai Patel Chest Institute, University of Delhi, New Delhi

Epidemiology of histoplasmosis in Southeast Asia and the Indian subcontinent, an update

Histoplasmosis is a non-contagious systemic fungal infection, caused by a thermally dimorphic fungus, *Histoplasma capsulatum*. The disease has a world-wide distribution but is most common in North America and Central America. Southeast Asia and Indian subcontinent are areas of low endemicity with rates of prevalence varying in different countries. From China, 300 cases were reported between 1990-2011, most of the cases being AIDS associated and autochthonous, 75% of them occurring along the Yangtze River. Histoplasmin skin test positivity ranged from 6% to 50% in the different population groups tested. Forty cases of histoplasmosis were reported from Malaysia and 30 from Thailand, while only sporadic cases have been reported from other Southeast Asian countries, viz. Taiwan, Hong Kong, Vietnam, Cambodia, Korea, Laos Myanmar, Indonesia and Philippines. In the Indian subcontinent, 416 cases of histoplasmosis have been so far reported from different parts of India, 20 from Bangladesh, 5 from Nepal, 4 from Pakistan, and 3 from Sri Lanka. The largest number of cases in India occurred in the State of West Bengal, followed by Uttar Pradesh, Delhi Union territory, Rajasthan, and Maharashtra. Histoplasmin sensitivity surveys carried out in different parts of northern India between 1952 and 1979 recorded skin-test positivity rates varying from 0-12.3%. Employing nested PCR, *H. capsulatum* has been recovered from many samples of soil contaminated with bat guano and avian excreta in Thailand. Information on the natural habitats of *H. capsulatum* in the Indian subcontinent is restricted to a single report of its isolation from a sample of soil admixed with bat guano, collected from a 300-yr-old bat infested building in Serampur near Kolkata. The burden of histoplasmosis in Southeast Asia and the subcontinent remains undetermined due to lack of adequate laboratory facilities and paucity of systematic and comprehensive studies, employing recently introduced molecular techniques.

DR. MALLYA JAGADISH ULLAL,

Senior Consultant, Department of Geriatric Medicine, Khoo Teck Puat Hospital, Singapore

An integrative care-bundle to prevent surgical site infections among surgical hip patients

Statement of the problem: Surgical site infections (SSIs) following hip fracture surgeries have profound clinical and economic implications for both patients and the healthcare system. Prevention of SSIs is complex and necessitates the integration of a range of measures before, during, and after surgical intervention using a multidisciplinary team approach. The purpose of this study is to analyse the effect of an integrative SSI prevention care-bundle on the overall SSI incidence among surgical hip patients. It also aims to examine the effect of SSI on mortality, readmission, duration of hospitalisation, and hospital cost.

Methodology: A retrospective cohort study was done to assess the SSI incidence in a Hip Fracture Unit within an acute care hospital in Singapore from January 2015-September 2017. Patients who developed SSI during their stay fall into the exposure group whereas patients without SSI fall into the non-exposure group. A comparison of the incidence of mortality, readmission, length of stay, and inpatient bill size was done between the two groups. **Findings:** Among the 758 hip surgeries, 14 (1.8%) SSIs were documented. SSI incidence was steadily decreasing over the years with the latest data at 1.4%. Compared to patients without SSI, patients with SSI were 4.27 times (95% CI [1.03-15.29], $p=0.03$) more likely to be readmitted within 30 days, had 2.47 times (95% CI [1.95-3.17], $p<0.001$) longer length of stay, and had 2.15 times (95% CI [1.73-2.71], $p<0.001$) the inpatient bill size. None of our patients who developed SSI passed away within 30 days, whereas 7 patients (0.9%) without SSI passed away within 30 days.

Conclusion and significance: SSIs are burdensome; consequently, preventive efforts could improve the efficiency of the healthcare system and result in substantial cost-savings. An integrative approach that capitalises on the expertise of a multidisciplinary team has proven to be effective in preventing SSIs while contributing to better patient outcomes within the unit.





PARTICIPANTS FEEDBACK:

We are pleased to report that the overall rating of the program was highly positive based on the responses provided by our participants in the evaluation questionnaires. This year's agenda offered a wide variety of topics. It was clear from participants' feedback that the lectures they attended enabled them to extract new ideas and innovative approaches in order to facilitate the health and wellbeing of elderly. Participants often reported that the conference inspired them to collaborate and partner with other programs in the community. Many attendees voiced their appreciation for shared knowledge, skills and resources that can be taken back to their workplace or community and applied in practice. Delegates were engaged with an array of sessions.

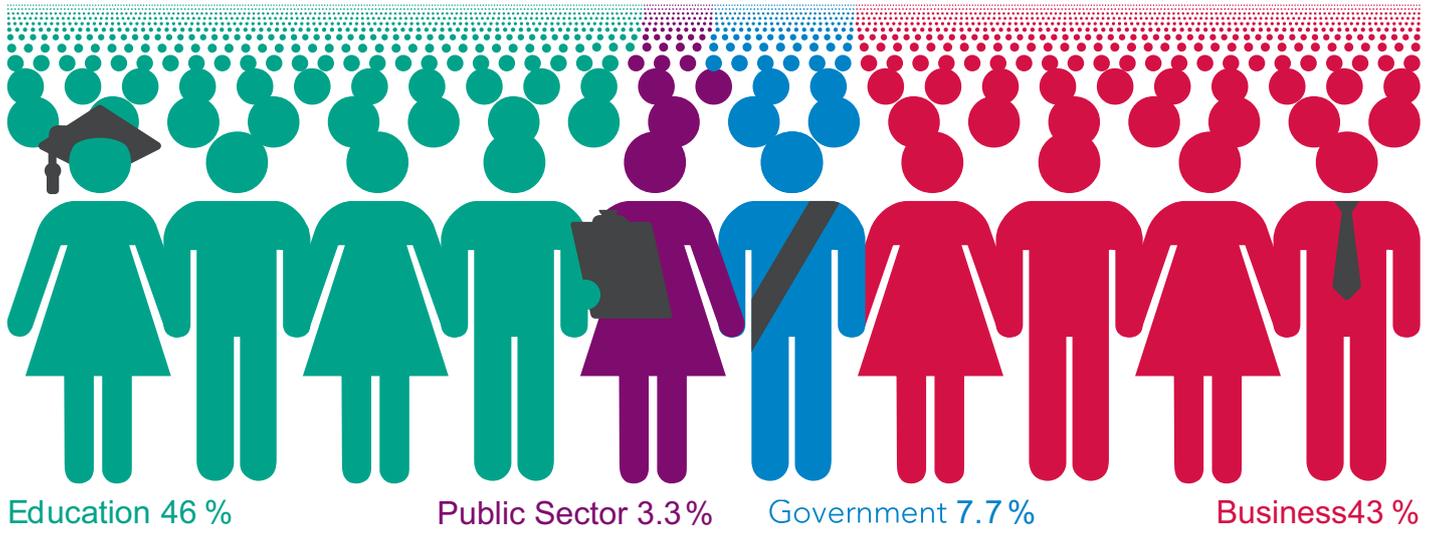
ACKNOWLEDGMENTS:

We would like to express our gratitude to everyone who contributed to the success of this event, especially the dedication and hard work of the conference planning committee. We would like to thank Department of Science and Technology (Science and Engineering Research Board), ICMR (Indian Council of Medical Research), DBT (Department of Biotechnology, Ministry of Science & Technology), and other institutions and organizations for their generous financial contributions. Without the work and support of the conference committee, sponsors, speakers and the public engagement, this conference would not have been possible. We would also like to extend our thankfulness to the Ministry of Home Affairs and the offices of Indian Embassies across borders for providing timely visa support to our international delegates.

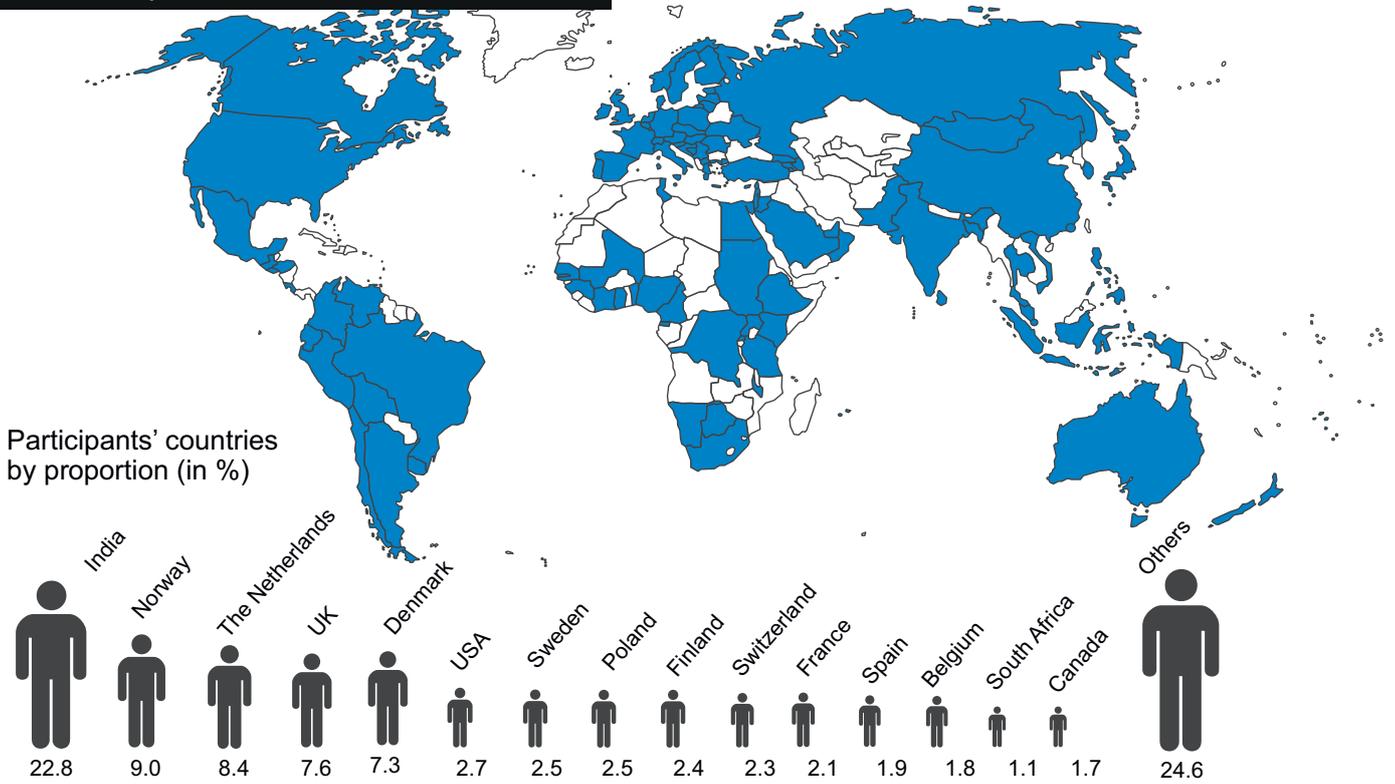


Number of participants and the sectors they represent

Total 1,500



Participants from 100 countries



THE OPENING PLENARY







CAD tends to be overlooked in women, says expert

Coronary Artery Disease in women has seen a steady rise'

SPECIAL CORRESPONDENT
GENDER seems to matter in the way Coronary Artery Disease (CAD) is perceived. The disease does not receive the attention and concern in women that it receives in men. Risk factors carry different predictive values and due to documented differences in presentation, the disease tends to be overlooked or

discussed in women, said a doctor from Sri Jayadeva Institute of Cardiovascular Sciences in a presentation at the World Congress on Cardiac Sciences that began in the city on Wednesday. CAD causes impaired blood flow in the arteries that supply blood to the heart. It is the most common form of heart disease. Making a presentation on 'Acute Coronary Syndrome in Women' at the conference, Veena Nanjappa, Interventional Cardiologist at Sri Jayadeva Institute of Cardiovascular Sciences and Research in Mysuru, said the in-

350 heart transplants in India since 2016

SPECIAL CORRESPONDENT
Organ donation and heart transplants are catching up in India. From 2016 till now, more than 250 transplants have been done in various hospitals in the country. The whole of Europe did

less than 100 in this period, said Vivek Jwala, chairperson of the World Congress on Cardiac Sciences that began in the city on Wednesday. "The good news is it is happening in smaller cities now. With innovative practices such as the

concept of 'green corridor' (India is the only country to have this) and use of passenger planes to transport organs, the transplant scene is getting better organised. Last year India did more transplants than any other country in the world," he added.

cardiac infarction risk among women compared with men. "The study confirmed a markedly stronger association of diabetes with myocardial infarction among women compared with men. Psychosocial factors also tended to associate more strongly with increased risk among women, though the difference was less in magnitude," she said.

like in the past when women got it mostly after menopause. The main reason for this is extreme stress caused due to multi-tasking. The risk factors for heart disease in women include the classic regular ones such as smoking, high cholesterol, high blood pressure, lack of physical activity and an unhealthy diet. "There are also some specific ones which include the use of birth control and other hormone pills. But, in 20% of women, atypical symptoms such as discomfort in the shoulders, back, and neck and shortness of

breath are often the first and only presenting symptoms," the doctor explained. **Need of the hour** "The need of the hour is to create awareness about the fact that heart diseases can affect anyone irrespective of their age or gender. Only early and corrective lifestyle changes and preventive measures can help in combating the risk factors and help avoid heart diseases. Women, in particular, need to be aware of the signs and symptoms and take adequate care of their health," Dr. Veena added.

INTERHEART study, the doctor said the large case-control study provided excellent data on the relationship of clinical parameters with the risk of ischemic heart disease worldwide, including patterns of association of myo-

Reasons for CAD Speaking to The Hindu, she said: "The most worrying factor is that it is affecting more women in the reproductive age group now, un-

Doctors worried over declining effectiveness of typhoid drugs

TIMES NEWS NETWORK

Bengaluru: The epidemic swept across Africa three years ago and now doctors are worried drug-resistant typhoid could hit India too. Doctors say the country is quickly running out of antibiotics to treat the disease. Ciprofloxacin, which was introduced in 1990 to battle the bacterial disease, has been rendered ineffective, prompting doctors to prescribe another drug (ceftriaxone). Dr Arti Kapil, professor of microbiology, All India Institute of Medical Sciences (AIIMS), New Delhi, said it is believed to be the

Drugs available online a concern

Doctors do not prescribe a combination of antibiotics, but it's available online, adding to the chaos. Patients who buy these drugs online may not be aware of the effects of taking them without a prescription. There is an urgent need to formulate guidelines on prescribing and using antibiotics. **Dr Arti Kapil** | PROFESSOR OF MICROBIOLOGY, AIIMS, NEW DELHI result of bacterial resistance due to overuse of antibiotics over last two decades.

Study required

Speaking about 'Antibiotics treatment for typhoid fever: Have we run out of options?' at the World Congress on Infectious Diseases and Antibiotics on Wednesday, Dr Kapil said the online sale of a combination of antibiotics to treat typhoid is a matter of concern. Dr Kapil stressed on the need to conduct a community-based typhoid survey across the country to understand whether there is a need to include typhoid vaccine in the immunisation scheme. "But such surveys require testing blood samples," she said. "This demands blood culture tests be done in pri-

mary health centres (PHCs). Currently, PHCs don't have a lab facility to support such a massive study." **Risk of heart ailment triples post-menopause** Dr Veena Nanjappa, Interventional cardiologist, Sri Jayadeva Institute of Cardiovascular Sciences and Research, Mysuru, said, "Cardiovascular disease (CAD) is twice as common among women with diabetes as those without. They are four times likely to be hospitalised, and women have a higher risk than men. Post menopause women are at equivalent risk to men of same age. Risk of CAD trip-les after menopause."

హృద్రోగ సమస్యలపై అప్రమత్తం అవసరం



ప్రఖ్యాత నైసకాలజిస్ట్ డాక్టర్ పద్మిని, చైర్మన్ డాక్టర్ వివేక్ జోషి తదితరులు

బెంగళూరు, నవంబరు 28 (ఆంధ్రజ్యోతి ప్రతినెది): హృద్రోగ సమస్యలపై ఉదాసీనత ఎంతో ప్రం కూడదని కార్డియోక్ సైన్సుస్ వరల్డ్ కాంగ్రెస్ అధిష్టాపాయ పడింది. నగరంలోని జైన్ టాటా ఆడిటోరియంలో రెండు రోజుల అంతర్జాతీయ సదస్సును లెఫ్ట్ నెంట్ జనరల్ డి.రఘునాథ్, కార్డియోక్ సైన్సు వరల్డ్ కాంగ్రెస్ అధ్యక్షుడు డాక్టర్ వివేక్ జోషి లాంఛనంగా ఆరంభించారు. కార్డియోక్ సైన్సుకు సంబంధించి ప్రపంచ వ్యాప్తంగా పరిశోధకులు, స్కాలర్లు, వైద్య నిపుణులు, హృద్రోగ నిపుణులు ఈ సమావేశంలో పాల్గొంటున్నారు. తొలిరోజు హృద్రోగాలు దరిచేరకుండా అనుసరించాల్సిన విధానాలపై చర్చించారు. గురువారంతో ఈ సదస్సు ముగియనుంది. చివరి రోజు సదస్సులో పలు పరిశోధనా పత్రాలు సమర్పించి వాటిపై విస్తారంగా చర్చించనున్నారు. ఈ సందర్భంగా వరల్డ్ కాంగ్రెస్ కార్డియోక్ సైన్సుస్ అధ్యక్షుడు డాక్టర్ వివేక్ జోషి మాట్లాడుతూ హృద్రోగాలు దాపరించ నీరులా విస్తరిస్తున్నాయని మారుతున్న జీవనశైలి ఇందుకు ప్రధాన కారణమన్నారు. కాలుష్యం ఇతర అంశాల ప్రభావంతో పోలిస్తే జీవనశైలి మార్పుకోవడం ద్వారా ఈ సమస్య నుంచి బయటపడే అవకాశాలు అధికం అన్నారు. సమస్య వ్యాప్త ఆందోళన చెందేకంటే రాకుండా అన్ని జాగ్రత్తలు చేపట్టడమే ఉత్తమ మార్గమన్నారు. సదస్సులో వ్యక్తమయ్యే ఆదారంగా భారతీయ వైద్య నిపుణులకు ఉపకరించేలా హృద్రోగ చికిత్సలు, వైద్య ప్రక్రియలకు సంబంధించి ఓ నివేదికను రూపొందించే ఆలోచన ఉందన్నారు.

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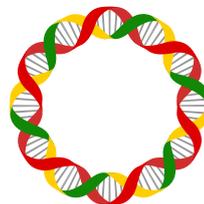
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