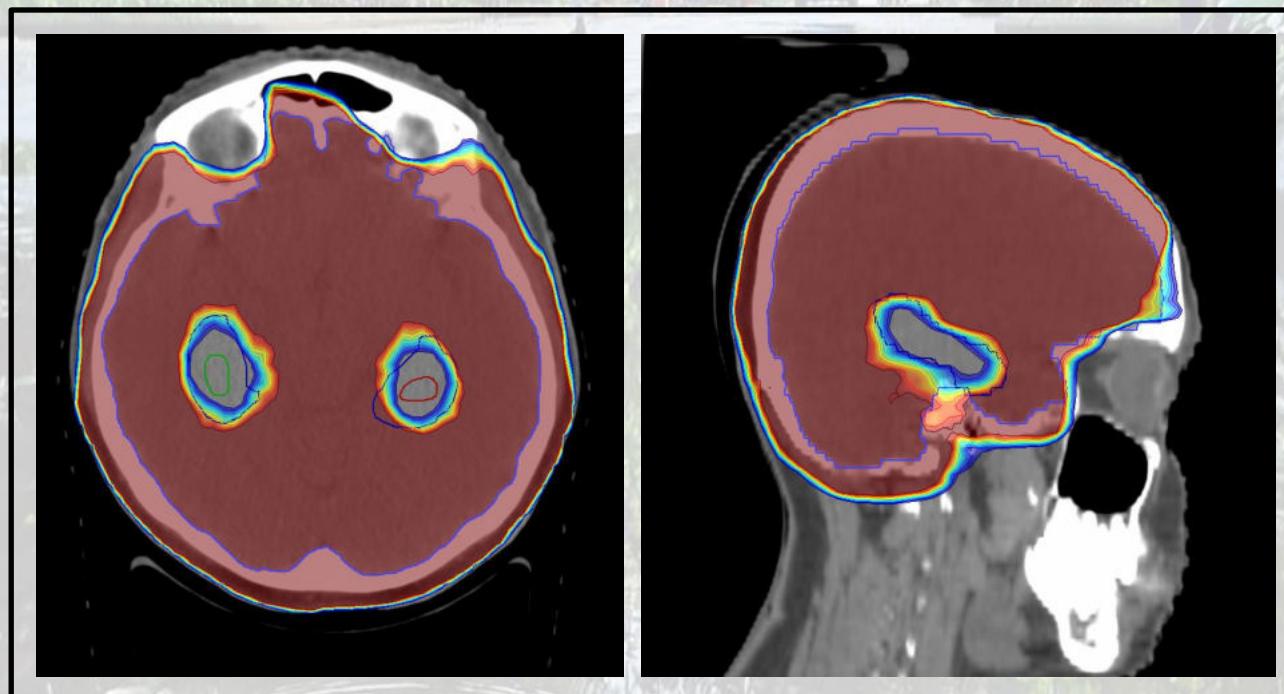


What's Up? @ St John's Hospital

Issue 52, October 1st, 2021



Hippocampus sparing Intensity modulated whole brain Radiotherapy in a Non-Small Cell carcinoma of lung. This helps in limiting the cognitive dysfunction in patients receiving whole brain radiotherapy. (PC: Dr. Nirmala S and Dr. John M G Sebastian)

WORLD PHYSIOTHERAPY DAY
2021
World Physiotherapy
Day
8th September 2021

EDITORIAL TEAM:

Archana S, Ananya R Sharma, Avinash. H. U, Deepak Kamath, Dhwani Ravi, Jyothi Idiculla, Monica Rita Hendricks, Nivedita Kamath, Rakesh Ramesh, Ruchi Kanhere, Sanjiv Lewin, Santu Ghosh, Saudamini Nesargi, Sowmya Kaimal, Sreenivasan N, Srilakshmi Adhyapak, Uma Maheshwari, Rev. Fr. Vimal Francis



St John's National Academy of Health Sciences
St John's Medical College Hospital, Bengaluru

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* We now present a fully interactive menu. It works best with Adobe reader application (on computers, mobile phones and tablets)



MESSAGE FROM THE EDITORIAL TEAM

Dear All!

Today, we are pleased to release fifty second issue of “What’s Up? @ St John’s Hospital” magazine. We welcome Dr. Sowmya Kaimal (Associate Professor, Department of Dermatology) to our editorial team.

The present issue commemorates World Physiotherapy Day 2021. We thank Ms. Ananya Sharma for providing us a report on all the activities by the Department of Physiotherapy on account of World Physiotherapy day.

The month of September was quite eventful in the academy with several new facilities and courses inaugurated. The present issue of magazine brings a gist of all those events.

We examine the news of metformin extended-release preparations and their association with cancer due to presence of NDMA in the section St. John’s watchdog.

Do not miss the story of a girl who fought her childhood kidney disease to come out in flying colours in the section of survivor’s corner. We highlight department of Radiation Oncology in the section Know your hospital.

The editorial team strives hard to provide as many updates of the academy as possible. However, we are sure that a few of them might be left out, since we may not get to know about every happening or accomplishment. Please feel free to communicate with us to publish your achievements.

Feedback on any section of the magazine is welcome. We are happy to evolve to meet the needs of our beloved readers. Happy Reading!!

Editorial Team

WORLD PHYSIOTHERAPY DAY

8th September 2021

World Physiotherapy Day is celebrated every year on the 8th of September which commemorates the contribution of Physiotherapists towards the community. Physiotherapy as a profession started in the 1950s and since then, it has come a long way. Physiotherapy has grown in leaps and bounds from the perception of being "Technicians/Masseurs" they now have moved into "First Contact Practitioners" and from "Allied Health" to "Health Professionals".

The field is progressing at a very rapid rate, filled with ardent practitioners aiming to accelerate recovery of patients from all walks of life. Physiotherapy has changed from being only rehabilitative to now preventive healthcare. Physiotherapy (PT) has various specializations and new branches are evolving as it continues to spread its wings!

Here at St Johns, we currently have specialists available for Neuro-rehabilitation, Musculoskeletal PT, Paediatric PT, Cardiorespiratory PT, Women's health PT, Oncology PT and Community based rehabilitation PT. Physiotherapy involves assessment, diagnosis and management of conditions across all these specialties. A day of a physiotherapist can vary from performing exercises, using physical modalities, performing invasive procedures such as dry needling, correcting the biomechanics, prescribing orthotics analysing and interpreting gait and movement, using diagnostic surface or needle EMG, and now entering into intraoperative neuro-monitoring - the challenges keep growing. In recent times, the importance of physiotherapy has been highlighted even more since COVID and the professionals are finally gaining their due place. This World Physiotherapy Day let's educate ourselves on the brilliance of this rapidly expanding dynamic field.

The World Physiotherapy Day celebration at SJMCH on the 8th of September was magnificent and vibrant with which the entire campus was awestruck. It started with a spirited inauguration at the amphitheatre, with the invited dignitaries gladly donning our world PT day T-shirts! The Director, Rev. Dr. Paul Parathazham was pleasantly surprised and addressed the crowd, appreciating the role of PT.



This was followed by a walkathon that was inaugurated by Rev. Dr. Fr. John Thekkara (Associate Director Hospital) and flagged off by the Rev. Dr. Fr. J. Charles (Associate Director College). In the wake of the pandemic, the theme for this year's World PT day was "Long COVID Rehabilitation". The walkathon was aimed at raising awareness on rehabilitation for long COVID patients. Following the rallies, flash mobs and skits with the intention of raising awareness were organized which filled our campus with vibrancy.

People watched in awe as our talented physiotherapy students raised awareness amongst healthcare professionals and the general population at various locations around the beautiful campus including the utility complex, the old mortuary and the main OPD Foyer. Over the past year, fighting COVID has been a struggle for patients as well as the healthcare system.

We won a few battles and we lost a few. COVID survivors have one more battle to win, the battle of long COVID. Physiotherapy is an integral part of rehabilitating patients suffering from long COVID. There are various guidelines such as those given by the World Health Organisation, NICE (National Institute of Health and Care Excellence) and the NIHR (National Institute for Health Research) on rehabilitation post COVID-19 and its long-term effects. Long COVID has also been an area of focus for research, with ample literature now available for guiding rehabilitation of Long COVID.





The World Confederation for Physical Therapy has also released multiple briefing papers on safe rehabilitation approaches. These guidelines combined with clinical reasoning are being used by physiotherapists across the world while rehabilitating patients affected by

COVID back to their optimal level of functioning. Complications like cardiac impairment, exertional oxygen desaturation, orthostatic intolerance/autonomic dysfunction, weakness, chronic pain, critical-illness neuropathies and myopathies are persistent in few patients post COVID and can be managed well with effective rehabilitation.

Moving forward, let's celebrate physiotherapists every day of the year and acknowledge their vital role in the healthcare system. Doctors add years to life and Physiotherapists add life to years. Keep calm and let physiotherapists handle it!!

L Johny

Art by: Dr. Rakesh Ramesh



NATIONAL NUTRITION WEEK

1st to 7th September 2021

- *Ms Rachana (MSc), Nutritionist, Division of Pediatric Hematology Oncology and BMT*



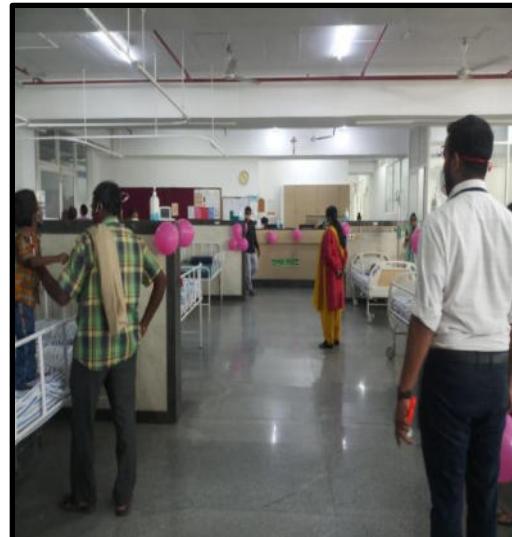
Malnutrition caused 69% of deaths of children below the age of five in India, according to a UNICEF report released on 2021. To raise awareness around the importance of healthy nutrition, National Nutrition Week is marked every year from 1st to 7th September.

The sole motive of National Nutrition Week is to enhance the awareness of a balanced diet and proper nutrition. This year's theme is "feeding smart right from the start" probably is the best motto to lay a healthy foundation right at an early age for a better tomorrow.

In children, optimal nutrition during cancer chemotherapy has a significant role in decreasing both morbidity and mortality. The National Nutrition week was celebrated in the Division of Pediatric Hematology Oncology with various activities for the children.

The week began with decorating the ward and orienting the parents about nutrition and adaptive eating habits. The initiative received a warm response and parents were keen to learn more. Following this, was an activity conducted for the kids, Musical chairs. It was played where a picture of junk food and nutritional food was stuck on chairs and any kid choosing junk food would be eliminated and the kid choosing nutritious food would win the game.

This game helped kids to ponder over inclusion of right food choices in their diet. The importance of hand hygiene and its steps was also communicated through posters and drawings. Children were asked to demonstrate the steps of proper hand washing and also when to wash hands. Kids who could convey the same were applauded. Bed side activities were also conducted for older kids.





A nutritional word search activity was given and were timed for the same. The intention of this activity was to introduce nutritional terms and its meaning. Few other bed side activities included drawings, asking younger kids to name any fruit and its health benefits and the importance of healthy eating. Also, healthy substitutes in various recipes were discussed and carrot walnut cupcake with wheat was given to kids demonstrating the same.

The bottom line - The link between good health and balanced nutrition is way too important to be ignored for any child because dietary habits that are inculcated in childhood are often carried into adulthood. Making small changes in the diet of kids today can make a huge impact in long run.



Inauguration and Blessing of New Intensive Therapy Unit (ITU)

ITU with 30 beds was blessed and inaugurated on the 3rd Floor 'B' Block on August 27th, 2021. This was supported by Goldman Sachs and United Way Bengaluru



KRITAGNYA AWARDS

31st July 2021

Kritagnya an NGO came forward to honour healthcare warriors from various hospitals in Bangalore City. Kritagnya paid tribute to St. John's COVID Warriors on July 22, 2021. Their team came to our campus.

St. John's Medical College Hospital has won the best innovation Award during the Pandemic in both clinical and non-clinical categories. Two of our innovations during covid 19 pandemic are selected as winner under both operational and Clinical category.

- a) Migrant Health Camps-Operational Category organized by Community Health Department.
- b) Intra operative modifications to Decrease or contain Aerosol Generation while operating on Maxillo-Facial trauma Cases during Covid Pandemic- Clinical Category by Plastic Surgery Department.

Citation and a cash award of Rs. 50,000 were received by Dr. Naveen Ramesh, (Associate Professor, Community Health Department) who represented our Institution at Hotel Lalit Ashok, Bangalore on July 31, 2021. One staff of our hospital lost her husband affected by COVID-19. She was selected by Kritagnya and awarded scholarship of Rs.2,00,000/-for her two children.



Acknowledgement: Mrs. Mary Noella,
Secretary to Associate Director Hospital

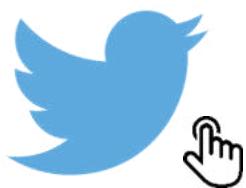
Inauguration of New Facilities

10th September 2021

New Oxygen Generator (Near Laundry Department), Laundry Effluent Treatment Plant (behind Annexe III) and the Little Flower Hostel (for lady students) were blessed and inaugurated by Most Rev. George Antonysamy (Chairman, Governing Board), in the presence of the Executives.



Acknowledgement and PC: Mrs. Mary Noella,
Secretary to Associate Director Hospital



For More Pictures, Click and
Follow our Twitter handle

School Health Program – St. John's College of Nursing

25th August 2021

As part of the community requirement, the 4thyr BSc Nursing students conducted a school health programme which included a health checkup, health education in Jyothipura high school, on personal hygiene and respect towards the



opposite sex, prevention of COVID and menstrual hygiene for girls. The school health programme was organized on 25th august from 11 am to 1 30 pm and catered to a total of 137 students which included 83 students from the lower primary cadre. Games were also organized for students.

Health checkup & Health education program for Refugees

10th September 2021



The second year B.Sc. nursing students in collaboration with the Brothers Integrated Rural Development Society organized a health checkup & health education program on 10th September 2021 for the refugees of Myanmar Muslims in Dasarahalli. The topics included prevention of Covid 19, non-communicable disease like Diabetes Mellitus, Hypertension and Personal hygiene. Prevention of occupational hazards were also highlighted. There were around 50 beneficiaries including women & children.

Acknowledgement: Prof. Reena Menon,
Principal, College of Nursing

Inauguration of Ph.D Nursing

13th September 2021

St. John's College of Nursing stepped onto another landmark milestone, as the 1st batch of Ph.D nursing course was inaugurated by Rev. Dr. Paul Parathazham (The Director, SJNAHS) who was the Chief Guest.



In his inaugural address he remembered with gratitude the founding fathers and pioneers who laid the foundation of this institution. Rev. Dr. John Varghese, Associate Director Hospital & College of Nursing, encouraged the Ph.D scholars to access the available resources and opportunities of SJNAHS. Sr. Ria Emmanuel, the CNS informed, "SICON has been striving to make the best possible efforts to soar to the pinnacle of excellence & Ph.D in nursing is one such step that empowers the nurses in attaining the same." Prof. Reena Menon, Principal, SICON welcomed the gathering. Dr. Bindhu Mathew, Vice Principal- PG, presented an overview of the course. Sr.Dr. Prasada Vice Principal- UG proposed the vote of thanks .

Health Education Program

15th September 2021



The final year M.Sc. Nursing pediatric specialty students organized a Health Education program on sleep hygiene among developmentally delayed children. The target group were the parents of children visiting the unit of hope. The Pamphlet used was the outcome of a research study by a former Pediatric Nursing student.

Acknowledgement: Prof. Reena Menon,
Principal, College of Nursing

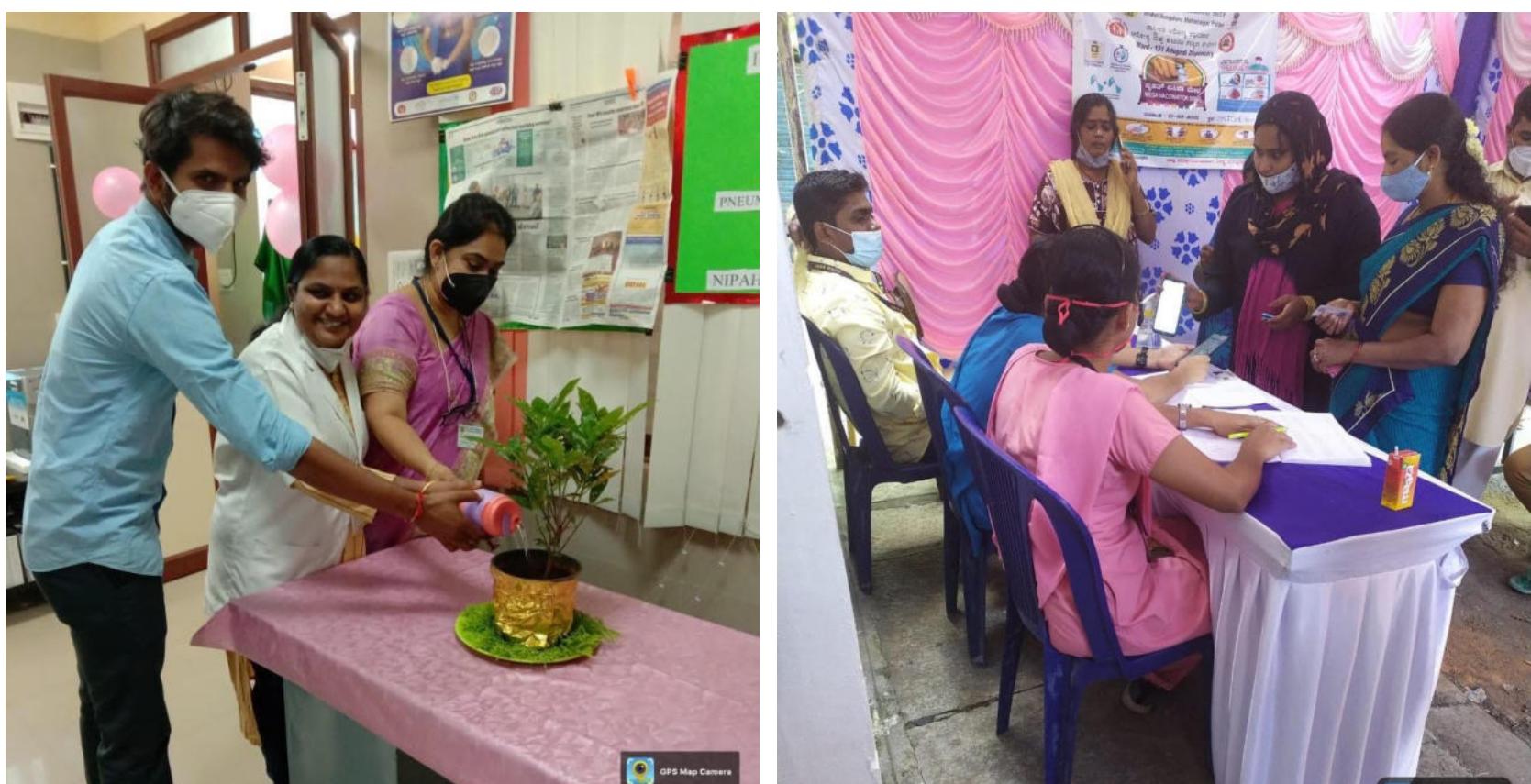
St. John's College of Nursing took part in Mega Vaccination Drive

17th September 2021

A mega vaccination drive was organized by the Government of India on 17th September 2021. A total of 2.5 crore people were the beneficiaries across the country & 30 lakh people were vaccinated in Karnataka. St. John's College of Nursing as usual did their part to contribute to this vaccination drive.

A total of fifty-eight, 1st year GNM and fifty-five, 4th year BSc Nursing students were involved. The students assisted in covering 11640 people in Bangalore. There were five student leaders appointed and they worked 7.30am to 7.00pm.

Mrs. Sano Rani, Tutor coordinated the vaccination drive and was the liaison between St. John's College of nursing & BBMP. M.Sc. nursing postgraduates were the vaccinators, while the UGs assisted the process by way of registration and taking care of the beneficiaries. It was a teamwork in keeping with the adage "**Together everyone achieves more**"



Acknowledgement: Prof. Reena Menon,
Principal, College of Nursing

'Famous last words!'

- Dr. Om Prakash, Emeritus Physician,
St. Martha's Hospital

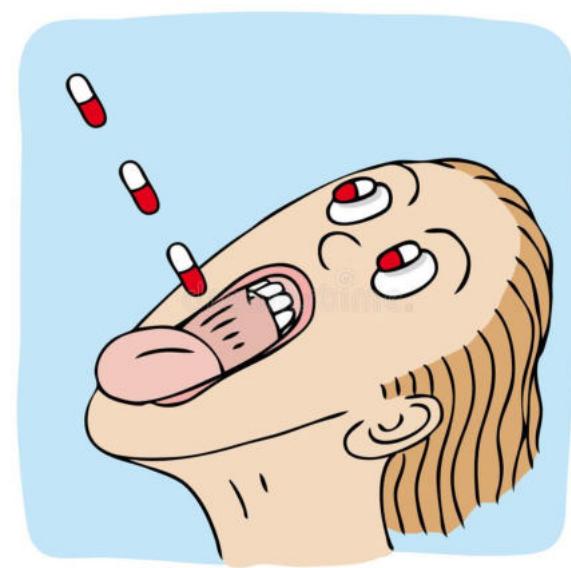
It was a busy day at the OPD. A 26-year-old-woman presented with a six-week history of cough, mostly dry. There was no fever or loss weight loss. On further probing the origin of the symptom, she mentioned that while attending a wedding reception in Jaipur, she saw a youngster tossing seeds of sapota into the air and artfully catching it with an open mouth.

Without knowing that fate was smiling behind her back, Ms SM, tried the trick. The first seed fell harmlessly to the ground; the second fell into her open mouth, followed by a severe bout of coughing. A GP was consulted and she took a course of cough syrup and antibiotic. The coughing persisted off and on. Upon returning to Bangalore, her family physician got a chest X-ray done, which was normal.

Physical examination was normal; notably, breath sounds were equal bilaterally. Routine blood tests and biochemistry were normal. I was, based on circumstantial evidence, certain that we were dealing with a foreign body. A CT scan performed was normal. At this stage, I suggested that a thoracic surgeon do a fiberoptic bronchoscopy.

Unconvinced, yet bowing to my suggestion he did a scope; he called me and said there was no FB. As this was done under local anesthesia, I requested him to do a leisurely scope under GA. This time, he found the dark sapota seed with a white streak! Using a basket device, he removed it and added it to his already large FBs.

Her father, having been told the good news, is said to have muttered, "*Mera ladki kahin Bharat se bahar kabhi nahin gayi, yeh foreign body kahan se aagaya?!*"



©Dreamstime

Un-Sung COVID WARRIORS of St. John's

Mr. Mahadeva & Mr. Shivanna

(Biomedical Waste Handlers, COVID Ward)



Imagine segregating and collecting all the different types of waste produced in the hospital - the red plastics, the yellow plastics, the black bags, the blood-stained gauze, linen that is too far gone, and so on and on - putting them into huge green waste trolleys - each weighing around 50-60 kgs in the very least - and pushing these trolleys around for the whole day, nearly every day, and doing that for more than twenty years. That's the work of a seasoned biomedical waste handler in a nutshell. Mr. Mahadeva, along with his other colleagues like Mr. Shivanna, is one such example.

Behind the staff parking lot that faces the Unit of Hope and beside St. John's Utility Complex lies our destination, the Biomedical Waste Management HQ (The "BMW" behind the parking lot). We patiently waited for Mr. Mahadeva, the unsung hero we were to profile. He hurriedly sat down, itching to get our interview over with, so that he and his colleagues could return to work. No further indication of dedication and zeal to one's job was necessary.

Un-Sung COVID WARRIORS of St. John's



From Left to Right (Biomedical Waste management department):
Mr. John, Mr. Mahadeva, Mr. Muniraj and Mr. Shivanna

He tells us that the pandemic blues have hit him and all other workers with a larger workload. However, it's nothing he can't handle. Work has never been overwhelmingly hard. He's had a good time for the most part. He's worked here for 22 years, doesn't remember any low points, hasn't been dealt a bad hand, and is overall grateful for his job. His work is different but integrated with the work waste handlers do.

His work involves segregating all the waste coming from different parts of St. John's. He works for 8 hours in total, pushing heavy trolleys along with his fellow workers, and impressed upon us that it wasn't as hard as it sounds. His colleagues tell us that even if he was tired, he would smile and work. When we asked Mr. Mahadeva's recollection of low-points in his work, he said "It's no cause for worry, I pay no attention to it".

You can tell a pillar of the institution by their memory of exactly how long they've worked in St. John's but not know and not care about their own age. Upon an amicable laughter that broke out in the office room, his colleagues suggested he's around 45 years of age.

Un-Sung COVID WARRIORS of St. John's

A family man at heart, he is presently preoccupied with the marriage preparations for his second daughter. He says he's constantly inspired by his two daughters who work tirelessly to make ends meet.

His only wish is that hospital authorities keep an eye on them, he says "as teacher teaches all students irrespective of who is smart or weak, likewise authorities should keep an eye on them whether they are having any issue related to work and so on."

His colleagues suggested that work might be easier if the doctors and physiotherapists, or someone like that, could come in occasionally to check on their musculoskeletal health and overall wellbeing from time to time. You try pushing one of these huge trolleys once in a while!

So, the next time you see uniformed men pushing huge green trolleys, think about Mr. Mahadeva and his colleagues who work energetically and tirelessly to ensure they do their bit towards a cleaner and more organized St. John's Medical College Hospital.

Interview and Write up By: Judah Pereira,
MBBS 2017Joel Sunny, AHS 2020



SURVIVOR's CORNER

Transforming tragedy into a dream.

A 14 year old girl was diagnosed to have chronic kidney disease and referred to the department of Pediatric Nephrology at St John's Medical College. After being on peritoneal dialysis for about 6 months, she underwent renal transplantation. Her mother donated the kidney. Following the transplantation, though there was a transient delay in the functioning of the transplanted kidney, she recovered well and went home three weeks after transplantation with normal kidney function. As she hails from Odisha, she went back to her home state and continues to be on follow up with the nephrology team at Bhuvaneshwar. Six years following renal transplantation, she has normal kidney function and is doing well on immunosuppressive medications. Though²she had to miss a year of education to avail medical care, she went back to school and excelled in her studies. Last year, she joined Government Medical College, Balasore and is pursuing MBBS. She wishes to become a nephrologist and help many more children like her who suffer from kidney disease.

**Congratulation to Pediatric
Nephrology and Team**



RECALL OF METFORMIN PRODUCTS DUE TO IMPURITY THAT INCREASES RISK OF CANCER

The Controversy: Starting 2019, the US Food and Drug Administration (FDA) ordered the recall from the market of certain formulations namely,

- Anti-diabetic - Metformin-extended release (ER),
- Anti-hypertensive - Angiotensin Receptor Blockers (ARBs) – Valsartan and Losartan
- Acid suppressant - Ranitidine
- Anti-TB antibiotic – Rifampicin/ Rifapentine

of certain select companies. They did this because chemical analyses of randomly selected samples of pills indicated the presence of a chemical impurity – N-di-methyl-nitrosamine (NDMA) in the tablets. The FDA reasons that the presence of NDMA levels leading to a total consumption greater than 96 ng/ day over a long period of time leads to an increased risk of cancers (lung, liver and GI tract) based on studies in animals. These led to several companies across the world withdrawing their products from the US, EU and their home markets. In India, manufacturing plants that exported products to the United States (audited by FDA inspectors) which included the plants of Granules India, Sun Pharmaceuticals and Torrent Pharmaceuticals. The products of several global companies were also withdrawn.

How did NDMA get into these products?:

NDMA is easily generated through simple chemical reactions at any point in the manufacturing process – it can be present in reagents or in the excipient in the tablet/capsule. It is very difficult to trace small amounts of NDMA and stringent quality control measures are needed at different points in the manufacturing process to detect NDMA.

How much of NDMA causes cancer?

The FDA clearly states that the development of cancer requires long periods, that is many years of exposure to consistently high levels of NDMA for the chemical to increase cancer risk.





St John's WATCHDOG

METFORMIN AND CANCER?



Many years of exposure to less than toxic levels is not carcinogenic. Short periods of exposure to more than recommended levels is also not carcinogenic.

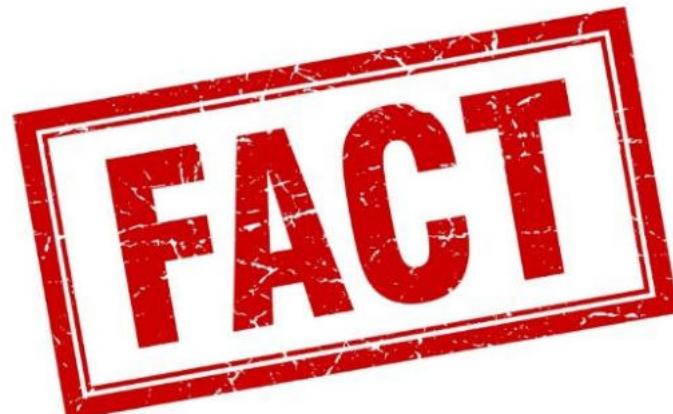
Could other Indian products also have this contaminant? And what can one do to reduce one's risk of cancer if they are on these medications?

It's possible that other products especially containing tetracycline, H1 antagonists (anti-histamines) such as chlorpheniramine and sumatriptan (anti-migraine) also have this contaminant. One hopes that if present they are at lower than permissible levels. India's Central Drugs Standard Control Organization (CDSCO) has held workshops for quality control officials of the Indian pharmaceutical industry to identify strategies to minimize the levels of the contaminant.

Further Refs:

<https://www.fda.gov/drugs/drug-safety-and-availability/fda-updates-and-press-announcements-ndma-metformin>

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2775725>



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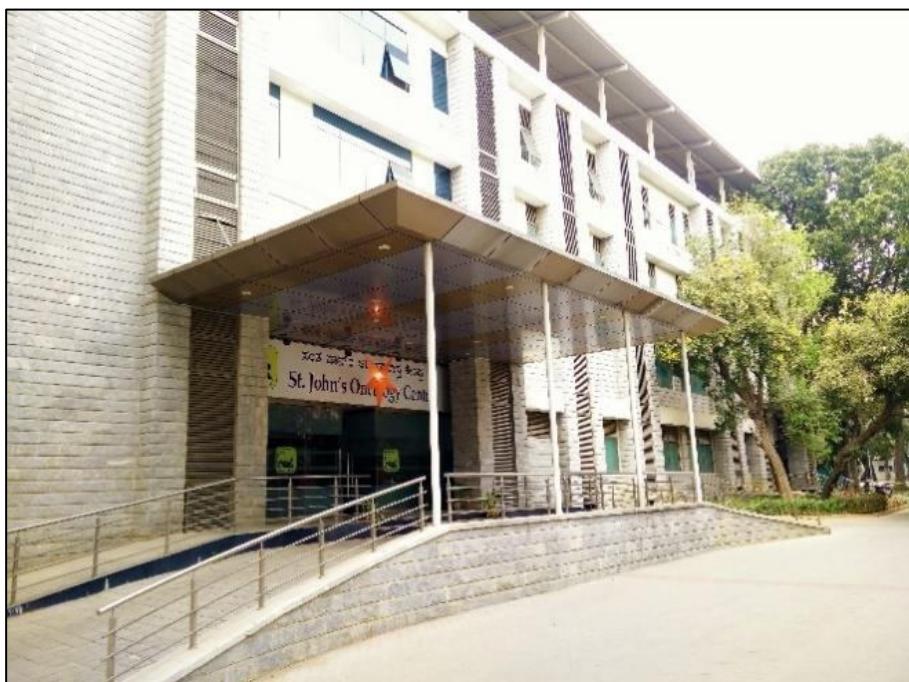


DEPARTMENT OF RADIATION ONCOLOGY

St John's Oncology Center offers comprehensive cancer care at an affordable cost, and the Department of Radiation Oncology is an integral part of the Oncology Unit

The Director of St John's National Academy of Health Sciences had the foresight and dream to establish the Department of Radiation Oncology at St John's Oncology Center, which is part of St Johns Medical College. This full-fledged state-of-the-art department was established in July 2011 in the new St John's Oncology Centre with the help of philanthropist Mr. Leslie Fernandes, in memory of his beloved wife, Mrs. Cynthia Fernandes, who bravely battled cancer until her death

The department has been fully operational since January 2013. Dr. Mazhar H Shariff, who was also instrumental in the department's establishment, served as its Head until his term expired in April 2016.



Location:

The department is located on the ground floor of St. Johns Oncology Center, which can be accessed through St. Johns Medical College's Gate No. 2.

ONCOLOGY



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ONCOLOGY

OPD Services:

The department runs Outpatient clinics on all days of the week. Outpatient clinics and procedure rooms are located on the ground floor of the Oncology block at Room no **31A**. Registration counter is also located on the ground floor of oncology block for patients' convenience

Timings: 9 AM to 2 PM on all days

Services Provided:

Teletherapy Services:

1. ***High Energy Linear Accelerator (Elekta Synergy IGRT Machine):*** This machine is a State-of-art High-end Teletherapy Unit used to treat cancers by External Beam Ionizing Radiation. It has Triple Energy Photons (4, 6 15MV) and Electrons. The machine is equipped with onboard planar (EPID – Electronic Portal Imaging Device) and volumetric imaging (CBCT – Cone Beam Computed Tomography). To this date, we have treated ***more than 3500 patients*** on this machine. The Following technologies are offered to the patients in teletherapy.
 - a. Three-Dimensional Conformal Radiotherapy (3DCRT)
 - b. Electron Beam Therapy (EBT)
 - c. Intensity Modulated Radiotherapy (IMRT)
 - d. Image-Guided Radiotherapy (IGRT)
 - e. Volumetric Modulated Arc Therapy (VMAT)
 - f. Stereotactic Radiosurgery (SRS)
 - g. Stereotactic Radiotherapy (SRT)



2. ***Dedicated CT Simulator (GE Four Slice CT Simulator):*** Every patient undergoes a specially focused CT Simulation in which the area to be treated is scanned by a four-slice Scanner, and the images are then transferred to a dedicated treatment Planning Computer. On these images, the oncologist delineates the tumour and the normal organs in the surrounding area, and medical physicists plan appropriate technology to deliver the precise dose of

ONCOLOGY



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ONCOLOGY

radiation to the tumour while causing the least amount of damage to the normal organs. The machine is fully equipped and modified to suit the radiotherapy planning with the carbon fiber flat couch, immobilization and positioning devices, and wall-mounted moving laser systems. Having a dedicated CT simulator in-house, such as ours, is beneficial.



3. ***Advanced Treatment Planning Systems and Contouring Stations aid in precise planning and delivery of radiation to patients:*** St John's Radiation oncology department is equipped with the latest version of Monaco 5.10 treatment planning system and is periodically updated to the newer versions. Monaco Treatment planning system is based on Monte Carlo Algorithm, which is the most accurate method of dose calculation presently known to humankind and is the current State-of-Art technology



ONCOLOGY



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Brachytherapy Services:

We have an HDR Remote after-loading Brachytherapy unit (Bebig Multisource HDR Brachytherapy Unit by Eckert & Zeigler) for Brachytherapy of various sites.

This highly sophisticated remote-controlled high dose rate after loading Brachytherapy unit is used for all forms of brachytherapy techniques like intracavitary, interstitial, intraluminal, and surface mould. This can be the sole treatment or in conjunction with External beam Radiotherapy. Department of Radiation oncology practices volumetric CT image-guided Brachytherapy for all the patients. The faculty is well-trained and highly experienced in Brachytherapy for Gynaecological Malignancies (Carcinoma Cervix, Endometrium, Vagina), Soft Tissue Sarcoma, Breast Cancer, Head and Neck cancers.



Apart from routine services for various cancers, we also do specialized treatments such as,

1. Total body Radiotherapy as part of the bone marrow transplant program
2. Radiotherapy in Non-cancerous cases like keloid and extramedullary hematopoiesis
3. Hippocampus avoidance Brain Radiotherapy
4. Stereotactic Radiotherapy and Radiosurgery for Intracranial lesions.
5. Accelerated partial breast Irradiation in selected cases.
6. Blood and blood products Irradiation



Radiation

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Radiation



ONCOLOGY

Academic Activities:

The department runs an NMC approved postgraduate MD program in Radiotherapy with an intake of 2 seats per year. The department also runs a three-year BSc course in Radiotherapy technology under RGUHS

Research activities:

The department also carries out research activities both funded and non-funded in the areas of Cervical cancer, Rectal cancer, breast cancer, and head and neck cancers.



The TEAM (Left to Right): Mrs. Shibina Noorjahan (Chief Radiotherapy Technologist), Mr. Ravindra Babu (Radiotherapy Technologist), Mr. Ajay (Radiotherapy Technologist), Dr. John Sebastian MG (Assistant Professor), Dr. Sandeep Muzumder (Associate Professor), Dr. Nirmala S (Professor and Head), Dr. Avinash HU (Associate Professor), Mr. Kathiresan (Assistant Professor, Medical Physicist and Radiation Safety Officer), Mrs. Karthika (Junior Medical Physicist)

Acknowledgement: Dr. Nirmala S,
Professor and Head, Department of
Radiation Oncology

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LAUGHTER IS THE BEST MEDICINE...



I ruined his work of a lifetime! Instead of rushing towards the food when he rang a bell, I ran in the opposite direction.....



Can't unwind is it? I told you not to follow books written by quacks.....



Best of R.K. Laxman,
Times of India

“ST. JOHN’S FOUNTAINHEAD”

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St. John's FOUNTAINHEAD

INNOVATION

DISCOVERY

Topical Controlled Warm Oxygen Therapy Delivered Through a Novel Device (KADAM™) to Treat Diabetic Foot Ulcers: A Randomized Controlled, Open, Pilot Trial

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Abstract

Adjunctive topical oxygen therapy offers promise in accelerating diabetic foot ulcer healing. We hypothesize that topical warm oxygen delivered at a controlled temperature (42 °C) through a proprietary device (KADAM™) will improve ulcer healing and be well-tolerated among patients with type 2 diabetes mellitus and with foot ulcers of Wagner-Meggitt grades 2 and 3. This trial employed a randomized controlled, open label design, with the outcome assessor blinded to allocation. We randomized 20 patients in a 1:1 allocation ratio, to intervention and control (standard of care) arms. The intervention arm received in-hospital topical warm oxygen at 42 °C for 90 min/session. This was repeated on alternate days for 6 weeks (18 sessions). Patients in the control group got standard care, and all received standard wound care. The primary outcome was a change in the ulcer area from baseline visit to follow-up at 6 weeks, day 5. There was a significant reduction in the area of the ulcer in the intervention group between baseline and week 6, day 5 [log area intervention group baseline vs week 6 day 5, 2.72 (0.57) vs 1.54 (0.95), change = - 1.18 (- 0.58, - 1.78), $p = 0.019$]. Between-group ulcer area at week 6, day 5, was also significantly different [intervention vs control (log area), 1.54 (0.95) vs 2.94 (1.05), $p = 0.005$], with the difference favoring the intervention group. There were no adverse reactions in the intervention arm. Adjunctive topical warm oxygen delivered at 42 °C and normal pressure can potentially improve diabetic foot ulcer healing and is well-tolerated.

Indian Journal of Surgery <https://doi.org/10.1007/s12262-021-03057-w>

Innate Immune Cytokine Profiling and Biomarker Identification for Outcome in Dengue Patients

Pradeep SP, Hoovina Venkatesh P, Manchala NR, Vayal Veedu A, Basavaraju RK, Selvasundari L, Ramakrishna M, Chandrakiran Y, Krishnamurthy V, Holigi S, Thomas T, Ross CR, Dias M, Satchidanandam V

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Abstract

Background: Early biomarkers of progression to severe dengue are urgently required to enable effective patient management and control treatment costs. Innate immune cells, which comprise the earliest responders to infection and along with the cytokines and chemokines they secrete, play a vital role in orchestrating the subsequent adaptive immune response and have been implicated in the enhancement of infection and "cytokine storm" associated with dengue severity. We investigated the early innate immune cytokine profile of dengue patients during acute phase of disease in a prospective blinded study that included subjects with acute dengue and febrile controls from four major hospitals in Bengaluru, India along with healthy controls. We used intracellular cytokine staining and flow cytometry to identify innate immune biomarkers that can predict progression to severe dengue.

Results: Dengue infection resulted in enhanced secretion of multiple cytokines by all queried innate immune cell subsets, dominated by TNF- α from CD56 $^{+}$ CD3 $^{+}$ NKT cells, monocyte subsets, and granulocytes along with IFN- γ from CD56 $^{+}$ CD3 $^{+}$ NKT cells. Of note, significantly higher proportions of TNF- α secreting granulocytes and monocyte subsets at admission were associated with mild dengue and minimal symptoms. Dengue NS1 antigenemia used as a surrogate of viral load directly correlated with proportion of cytokine-secreting innate immune cells and was significantly higher in those who went on to recover with minimal symptoms. In patients with secondary dengue or those with bleeding or elevated liver enzymes who revealed predisposition to severe outcomes, early activation as well as efficient downregulation of innate responses were compromised.

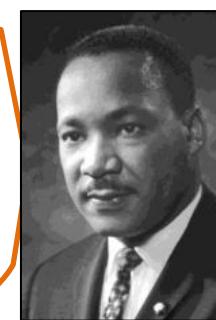
Conclusion: Our findings suggested that faulty/delayed kinetics of innate immune activation and downregulation was a driver of disease severity. We identified IFN- γ $^{+}$ CD56 $^{+}$ CD3 $^{+}$ NKT cells and IL-6 $^{+}$ granulocytes at admission as novel early biomarkers that can predict the risk of progression to severity (composite AUC = 0.85-0.9). Strong correlations among multiple cytokine-secreting innate cell subsets revealed that coordinated early activation of the entire innate immune system in response to dengue virus infection contributed to resolution of infection and speedy recovery.

Front Immunol. 2021 Jul 14;12:677874. doi: 10.3389/fimmu.2021.677874.

PEARLS OF WISDOM

Injustice anywhere is a threat to justice everywhere.

- Martin Luther King, Jr.



©Nobel Prize



©YouTube

You are never too old to set another goal or to dream a new dream.

- C. S. Lewis

Life is like an ice-cream cone; you have to lick it one day at a time.

- Charles M. Schulz

REF: 365 Days of Wonder: R.J.Palacio.



© Colour Box

Did You Know?

Lions are identifiable through their whisker patterns.

Like humans and fingerprints, each lion has a whisker pattern unique to their nose. Back in the late '60s, researchers conducted a whisker hole identification method that involved overlapping photographs of lions' noses with a standard grid. (Ref: Readers Digest and The New York Times)



© Readers Digest



GREY Matters!



100 years of Insulin!

1. How is this currency note associated with Insulin?



3. Who are these scientists and how are they connected to Insulin?



2. How are these snails related to Insulin



4. What honor does Insulin share with scorpion venom, king cobra venom, LSD, horseshoe crab blood and Chanel No. 5 perfume?

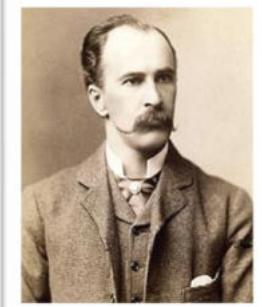
5. What does this picture represent that has become a form of self-expression for young diabetics?



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THE QUOTABLE OSLER



SIR WILLIAM OSLER



© NIH in health

Never listen to a patient's criticism of another doctor.

There is only one safe rule - never listen to a person who begins with a story about the carelessness and inefficiency of Dr. Blank. Shut him or her up with a snap, knowing full well that the same tale may be told of you a few months later. Fully half of the quarrels of physicians are fomented by the tittle-tattle of patients, and the only safeguard is not to listen.... Never believe what a patient tells you to the detriment of a brother physician even though you may think it to be true.

REF: The Quotable OSLER: Edited by Mark E Silverman, T. Jock Murray, Charles. S Bryan



MEDICINE THIS MONTH

A Bird's Eye View.....

Third dose of mRNA vaccine more immunogenic in transplant recipients

The standard two-dose vaccination strategy for Covid-19 has suboptimal immunogenicity in immunosuppressed patients. An RCT was conducted in 120 organ transplant recipients who received a third dose of mRNA-1273 (dosing schedule: 0, 1, and 3 months). Serologic response was assessed by anti-receptor-binding domain (RBD) antibody level of at least 100 U/ml at month 4. At month 4, an anti-RBD antibody level of at least 100 U/ml was present in 33 of 60 patients (55%) in the mRNA-1273 group and in 10 of 57 patients (18%) in the placebo group (relative risk, 3.1; 95% confidence interval [CI], 1.7 to 5.8; $P<0.001$).

- Hall VG et al, NEJM. Aug 2021.

Progesterone supplementation reduces preterm birth in high risk pregnancies

A systematic review of 31 RCTs comparing vaginal progesterone, intramuscular 17-hydroxyprogesterone caproate (17-OHPC) and oral progesterone with controls in asymptomatic women at high risk of preterm birth was undertaken. Vaginal progesterone and 17-OHPC both reduced birth before 34 weeks' gestation in high-risk singleton pregnancies. Given increased underlying risk, absolute risk reduction is greater for women with a short cervix, hence treatment might be most useful for these women. Evidence for oral progesterone is insufficient to support its use.

- Stewart LA et al (EPPPIC group), Lancet. Mar 2021.

CORRESPONDENCE

Randomized Trial of a Third Dose of mRNA-1273 Vaccine in Transplant Recipients

TO THE EDITOR: In organ-transplant recipients, the standard two-dose vaccination strategy for coronavirus disease 2019 (Covid-19) has suboptimal immunogenicity.¹ Both patients and health care providers have questioned whether a third-dose booster in transplant recipients would be safe and enhance immune response.² We performed a double-blind, randomized, controlled trial of a third dose of mRNA-1273 vaccine (Moderna) as compared with placebo (the protocol is available with the full text of this letter at NEJM.org; ClinicalTrials.gov number, NCT04885907).

Transplant recipients who had received two doses of mRNA-1273 were randomly assigned in a 1:1 ratio to receive either a third dose of mRNA-1273 vaccine or saline placebo 2 months after the second dose of mRNA-1273 (dosing schedule: 0, 1, and 3 months). The primary outcome was a serologic response characterized by an anti-receptor-binding domain (RBD) antibody level of at least 100 U per milliliter at month 4 (measured with an Elecsys Anti-SARS-CoV-2 immunoassay [Roche]). This outcome was prespecified and was based on the protective anti-RBD titer in a challenge study involving nonhuman primates³; it was further corroborated in a large clinical cohort as the upper boundary of the estimated level required to confer 50% protective neutralization.⁴ Secondary outcomes included the percent neutralization, as measured with a validated surrogate virus neutralization assay (Genscript), and the polyfunctional T-cell response (see the Supplementary Appendix, available at NEJM.org).

We enrolled 120 organ-transplant recipients (Fig. S1 in the Supplementary Appendix). No patient had a previous diagnosis of Covid-19. The baseline characteristics were similar in the two groups (Table S1), as were the preintervention anti-RBD antibody levels and neutralizing antibody levels (Fig. 1B, 1C, and 1D). The median age of the patients was 66.6 years (interquartile range, 63.3 to 71.4), and the median time from transplantation to the third dose was 3.16 years (interquartile range, 1.71 to 6.12). The

time from transplantation was slightly shorter in the placebo group than in the mRNA-1273 group; however, the types, doses, and levels of immunosuppression were very similar in the two groups, as were the lymphocyte counts. Covid-19 developed in 1 patient (placebo group; preinfection anti-RBD antibody level, 75 U per milliliter), and 2 patients did not provide follow-up blood specimens.

At month 4, an anti-RBD antibody level of at least 100 U per milliliter was present in 33 of 60 patients (55%) in the mRNA-1273 group and in 10 of 57 patients (18%) in the placebo group (relative risk, 3.1; 95% confidence interval [CI], 1.7 to 5.8; $P<0.001$) (Fig. 1A and Table S2). The changes in anti-RBD antibody level from before to after the third dose are shown in Figure 1B. After the third dose, the median percent virus neutralization was 71% in the mRNA-1273 group and 13% in the placebo group (95% CI for the between-group difference, 11 to 76 percentage points), and the percentage of patients above the 30% threshold for neutralizing antibody positivity was 60% and 25%, respectively (relative risk, 2.4; 95% CI, 1.5 to 4.0) (Fig. 1C and Table S2). Median severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)-specific T-cell counts were greater after the third dose in the mRNA-1273 group than in the placebo group (432 vs. 67 cells per 10^6 CD4+ T cells; 95% CI for the between-group difference, 46 to 986) (Fig. 1D). There was a minimal polyfunctional CD8+ T-cell response in both groups. In the safety evaluation, local and systemic events were slightly more common after the third dose of mRNA-1273 than after the dose of placebo (Fig. S3), but no grade 3 or 4 events and no cases of acute rejection occurred.

A third dose of mRNA vaccine in transplant recipients had substantially higher immunogenicity than placebo, as determined in our analysis of both primary and secondary trial end points. This trial had short follow-up and was not powered to detect differences in clinical outcomes. We also acknowledge that the cutoff value of 100 U

REFERENCE 2: MEDICINE THIS MONTH

Evaluating Progestogens for Preventing Preterm birth International Collaborative (EPPPIC): meta-analysis of individual participant data from randomised controlled trials.

The EPPPIC Group . Lancet, Volume 397, Issue 10280, P1183-1194, March 27, 2021

Background: Preterm birth is a global health priority. Using a progestogen during high-risk pregnancy could reduce preterm birth and adverse neonatal outcomes.

Methods: We did a systematic review of randomised trials comparing vaginal progesterone, intramuscular 17-hydroxyprogesterone caproate (17-OHPC), or oral progesterone with control, or with each other, in asymptomatic women at risk of preterm birth. We identified published and unpublished trials that completed primary data collection before July 30, 2016, (12 months before data collection began), by searching MEDLINE, Embase, CINAHL, the Maternity and Infant Care Database, and relevant trial registers between inception and July 30, 2019. Trials of progestogen to prevent early miscarriage or immediately-threatened preterm birth were excluded. Individual participant data were requested from investigators of eligible trials. Outcomes included preterm birth, early preterm birth, and mid-trimester birth. Adverse neonatal sequelae associated with early births were assessed using a composite of serious neonatal complications, and individually. Adverse maternal outcomes were investigated as a composite and individually. Individual participant data were checked and risk of bias assessed independently by two researchers. Primary meta-analyses used one-stage generalized linear mixed models that incorporated random effects to allow for heterogeneity across trials. This meta-analysis is registered with PROSPERO, CRD42017068299.

Findings: Initial searches identified 47 eligible trials. Individual participant data were available for 30 of these trials. An additional trial was later included in a targeted update. Data were therefore available from a total of 31 trials (11 644 women and 16185 offspring). Trials in singleton pregnancies included mostly women with previous spontaneous preterm birth or short cervix. Preterm birth before 34 weeks was reduced in such women who received vaginal progesterone (nine trials, 3769 women; relative risk [RR] 0·78, 95% CI 0·68–0·90), 17-OHPC (five trials, 3053 women; 0·83, 0·68–1·01), and oral progesterone (two trials, 183 women; 0·60, 0·41–0·90). Results for other birth and neonatal outcomes were consistently favourable, but less certain. A possible increase in maternal complications was suggested, but this was uncertain. We identified no consistent evidence of treatment interaction with any participant characteristics examined, although analyses within subpopulations questioned efficacy in women who did not have a short cervix. Trials in multifetal pregnancies mostly included women without additional risk factors. For twins, vaginal progesterone did not reduce preterm birth before 34 weeks (eight trials, 2046 women: RR 1·01, 95% CI 0·84–1·20) nor did 17-OHPC for twins or triplets (eight trials, 2253 women: 1·04, 0·92–1·18). Preterm premature rupture of membranes was increased with 17-OHPC exposure in multifetal gestations (rupture <34 weeks RR 1·59, 95% CI 1·15–2·22), but we found no consistent evidence of benefit or harm for other outcomes with either vaginal progesterone or 17-OHPC.

Interpretation: Vaginal progesterone and 17-OHPC both reduced birth before 34 weeks' gestation in high-risk singleton pregnancies. Given increased underlying risk, absolute risk reduction is greater for women with a short cervix, hence treatment might be most useful for these women. Evidence for oral progesterone is insufficient to support its use. Shared decision making with woman with high-risk singleton pregnancies should discuss an individual's risk, potential benefits, harms and practicalities of intervention. Treatment of unselected multifetal pregnancies with a progestogen is not supported by the evidence.

RESEARCH SNIPPETS

WHAT IS A FUNNEL PLOT?

A funnel plot is a visual tool for investigating publication bias in meta-analysis. It is a scatter plot of the effect size against the sample size or precision of each study. The effect size could be the mean difference or standardized difference for continuous data or odds ratio/relative risk for event-like data.

The standard error of the effect estimate is often chosen as the measure of study size and plotted on the y-axis and effect sizes (could be log odds ratio) on x-axis. This puts the larger, most powerful with narrow spread towards the top, and smaller studies scatter more widely at the bottom, resembling an inverted funnel or fir tree. Therefore, the name “funnel plot.”

If the variability of effects sizes obtained from different studies are random, the plot looks symmetrical. In presence of any systematic bias, the plot looks asymmetrical. One of such bias is publication bias. For instance, inclusion of small studies with only positive results or large effect sizes would lead to publication bias. For example, a pharmaceutical company intentionally withholding studies from publishing that do not favour their drug of interest. Therefore, these studies get excluded from meta-analysis.

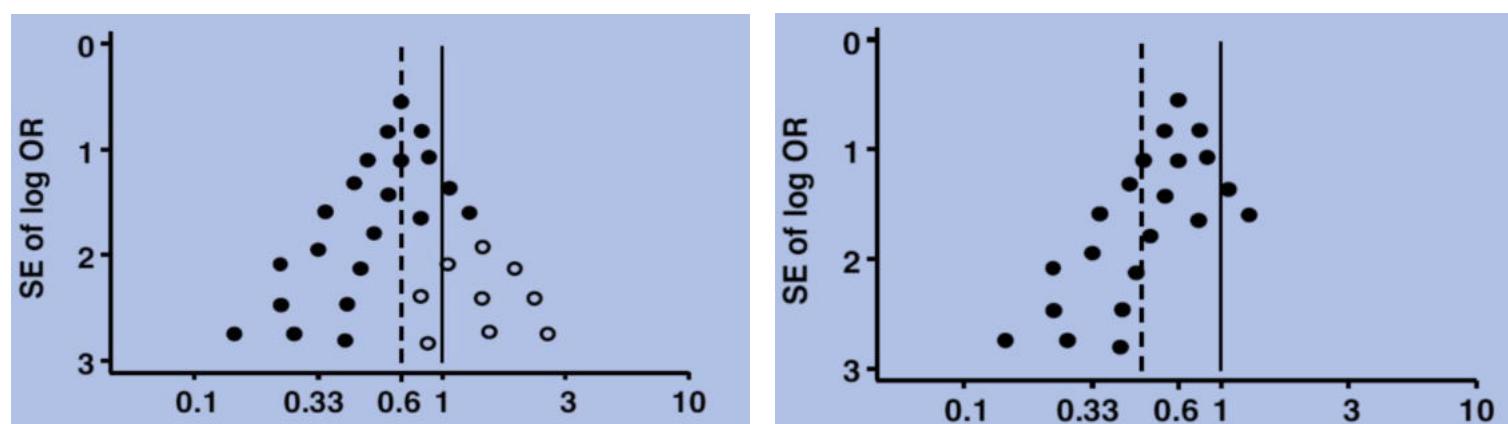


Figure: Hypothetical funnel plots: (left) symmetrical plot in the absence of bias (open circles indicate smaller studies showing no beneficial effects); (right) asymmetrical plot in the presence of publication bias (smaller studies showing no beneficial effects are missing)

RESEARCH SNIPPETS

FUNNEL PLOT

Apart from publication bias, other potential sources of asymmetry in funnel plots include: Location biases, Language bias, Citation bias, Multiple publication bias, True heterogeneity (size of the effect differs according to study size), Poor methodological design of studies, Inadequate analysis and fraud.

A funnel plot always should be interpreted as an indication of a bias of any kind, if it is asymmetric. The interpretation often is subjective too, a suitable statistical test can lead to a meaningful conclusion.

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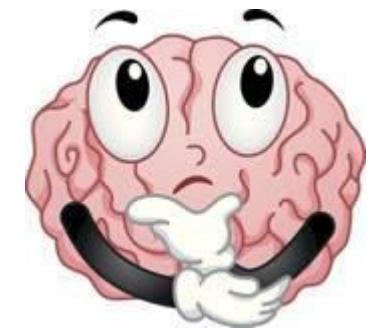
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Cover photo of the magazine,
PC: Dr. Himagirish.

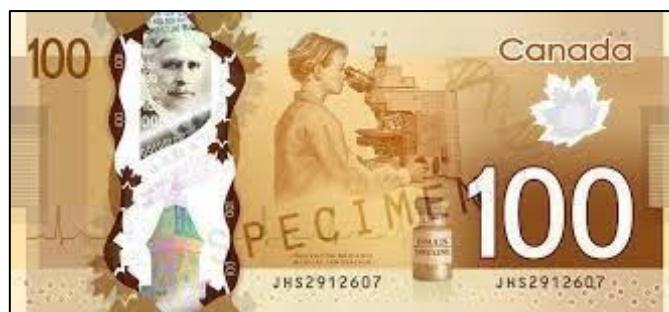


GREY Matters!



100 years of Insulin! ANSWERS

1. The \$100 Canadian currency note which bears a motif of the discovery of insulin by Banting and Best. See pic of the reverse of the note below.



2. Conus geographus and Conus tulipa - marine snails that are the only creatures that use insulin as a weapon, as a component of its highly potent venom named 'nirvana cabal'. The insulin acts to stun, inducing hypoglycemic shock in the snail's prey.
3. Oskar Minkowski and Von Mering. To prove pancreatic involvement in diabetes, they performed pancreatectomy on a dog which developed severe diabetes, proving pancreatic involvement in diabetes.
4. These are the most expensive liquids in the world.
5. Pump Peelz – custom designed stickers for Insulin pumps



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