KIDNEY KOLUMNS

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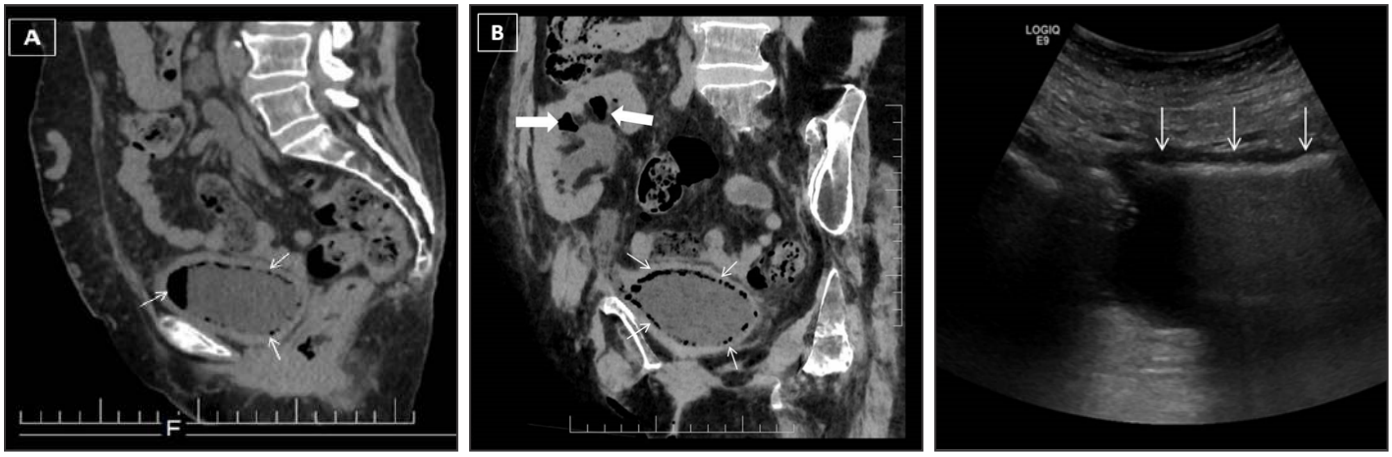

Dear Readers,

Welcome to the fourth edition of Kidney Kolumns! This time, we've tried to shine a light on some unusual and challenging infections encountered in nephrology. From rare pathogens to unique treatment approaches, we venture into some uncharted territory. Also in this edition, we're excited to present an interview on a topic that has occupied much mindspace amongst Indian nephrologists in recent times. This interview, along with the wise words in our seniors' perspective column should give you the reader much to ponder. Of course, we haven't forgotten our beloved Crossword puzzle, designed to engage and entertain while testing your knowledge.

As always, your feedback is essential to us. Whether you have comments, criticisms, or compliments, we welcome them at education@isn-india.org. Your input drives our commitment to sharing knowledge and exploration. We can't wait for you to dive into this edition and hope you find it as enriching as we do!

Warm regards,

Editors-in-Chief

Inside

KIDNEY KOLUMNS

COVER IMAGES :

Image 1,2 - CT abdomen and pelvis images, Sagittal image (A, Left) and Oblique coronal Minimum Intensity Projection (MinIP) image (B, Centre) showing air foci in bladder wall (thin arrows) and air in pelvicalyceal system of transplanted kidney in right Iliac fossa (Bold arrows).

Image 3(Right)- Ultrasound image showing reverberation artefacts due to air foci in bladder wall/ lumen (arrows)

Image Credits Dr Zaheer Amin Virani & Dr Hepal Mihir Vora
Consultant Nephrologists Institute of Renal Sciences Global Gleanegles,Mumbai

Hon. Secretary's Message

Dear Members,

Greetings from the ISN Secretariat!

First of all, I must congratulate and thank everyone for the grand success of ISNCON 2023 in Kolkata. The ISNCON 2023 was well-attended, well organised and rich in scientific content. The meeting started with workshops on 14th December and the enthusiasm to attend these workshops could be seen by full halls. The many new initiatives taken by Indian SN were shared with the members during the inaugural function including WCN 2025 from Feb 6-9 in Dwarka Convention Centre, New Delhi

The conference started with an inspiring talk by Our President- Dr Kohli. The plenary talks by all our international faculty were appreciated by all and significantly raised the bar of ISNCON 2023. This year the maximum number of papers and posters were presented during the meeting. The theme-based sessions post lunch, where we picked up our younger faculty were well attended. It was heartening to have good attendance on the last day of the meeting and approximately 500 delegates were attending the meeting till the last talk, which speaks about the scientific content of the meeting. I must congratulate the scientific committee of ISNCON 2023 led by Dr N Gopalakrishnan for an excellent scientific program.

We also received the good news from the ASN office, that 200 of our newly joined fellows will receive complimentary membership of ASN from next year July onwards, this is the result of the meeting of ISN leadership with the ASN council during Kidney Week in Philadelphia this year and I hope we bring out many collaboration for our members in the future.

I would take this opportunity to congratulate the Organising team led by Dr Arup Datta, Dr Saubhik Sural, Dr Arghya Majumdar, Dr Sandeep Bhattacharya and Dr Jayant Datta and their team of Kolkata Nephrology Society for their hard work and commitment to give a good experience for faculty and delegates. The venue was excellent, the sessions were running on time and in the evenings people could meet their friends and alumni.

Dear Friends, We have announced the post-doctoral fellowships for our newly passed graduates within 3 years of their completion of DM/DNB in various subspecialties. They can download the application form from our website www.isn-india.org to apply. The Indian SN would provide a stipend of 50,000 per month for the period of fellowship. We plan to take many new initiatives this year, which we will inform you about from time to time.

As we will not be doing ISNCON 2024 since Indian SN is co-hosting the WCN 2025, I would like to invite you all to come for WCN 2025. Our full meeting ISNCON 2025 will be done in Lucknow in November-December and the organising secretary will be Prof Narayan Prasad, the dates of which will be announced later.

Looking forward to your suggestions & feedback

Thanks and Warm Regards

Dr Shyam Bihari Bansal
Hon. Secretary
Indian Society of Nephrology

Incoming ISN President's Message

Indian Society of Nephrology (ISN), since its inception, has been committed to education and research which translate to excellence in patient care. It is indeed an honour to be at the helm of this prestigious body. As the President of Indian Society of Nephrology, first, let me express my gratitude to each & every member who put their faith in me. At this stage, not only do I feel humbled, but also fully aware of my responsibilities as an individual and as a part of policy makers for ISN for the coming year.

The World Congress of Nephrology (WCN) will be held in India in February 2025. It is the culmination of the dreams which the founders of the society had and reflect the hard work & perseverance of the leaders of the Society. And now, the responsibility of showcasing our myriad capabilities is on us. I am sure, all of us will join hands to show the world, the stature of Indian nephrology & its nephrologists.

There have been a lot of initiatives taken under the leadership of Dr. Sanjeev Gulati and Dr. Shyam, the Secretary. The newsletter is one of them. In the coming year, not only will we be building on them but will add some more academic events. "Cross talks" - an interaction of nephrologists with rheumatologists, endocrinologists, hepatologists and cardiologists will be initiated. It will be a monthly exercise to come out of our renal cocoon and have a drone view of everyday clinical problems. Additionally, the Indian Society of nephrology will be bringing out manuals in different fields which will address the practical issues and can be cited as Society's viewpoints.

In addition, there are two aspects close to my heart, which I wish to bring forth, during my leadership. Innovations by many nephrologists across the country, largely go unnoticed. Awards for such innovations will soon become a regular feature and will augment the interest of the brilliant minds in our community. The second aspect will address a totally different issue. I have often felt that we are "people of science" and approach every aspect scientifically. But do we attempt to study the "science of people" to understand our patients, their motivations and their priorities? To quote William Osler "It is much more important to know what sort of a patient a disease has, than what sort of a disease a patient has" We will be working on this in the coming year in form of dedicated sections "Patient's Voice" & "Bridging the barriers" either in physical and virtual meetings and also as part of the widely appreciated "Kidney Kolumns". Let's hear and listen to the patients who are our teachers too. Let this year 2024 bridge this important gap. The newsletter is extremely informative, and I congratulate the dynamic editorial team. To its readers, I will say "Don't just read, absorb it".

Wishing all the Nephrology family a happy & healthy 2024.

Professor Harbir Singh Kohli
Professor and Head,
Department of Nephrology,
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Chandigarh

ISNCON-23 REWIND

The Excitement isn't over yet!

A fine cold morning of December welcomed us to the city of joy as we landed looking forward to being a part of the biggest nephrology academic feast, ISNCON23.

The venue : ITC Royal Bengal welcomed delegates with its majestic driveway, the palatial gates, and the tall corridors. A big wall bearing pictures of great leaders of ISN stood tall and wide at the entrance sending a strong message of the struggles and the success stories of the Indian Society of Nephrology (ISN) to the younger generations.

The first day of the conference was carefully crafted with workshops spanning wide areas of nephrology. I decided to hop between the halls to get a flavor of all those. The screens of the conference projected pictures of the six Nobel laureates of West Bengal. It kept me wondering about what's so special about this place where many of them worked to reach such great heights.

The genetics workshop took off from the very basics of genetic investigation in kidney diseases to the latest advancements.Many nephrologists and budding nephrons gave a different flavor to their love for salt and minerals in the acid, base, electrolyte workshop. I am sure many of us who really wanted to do research struck gold by attending the research methodology workshop which was led by top notch researchers across the world. The different colors and intensities of light microscopy, the varying shades of black and grey of electron microscopy of glomeruli made so much more sense after the case-based discussion at the histopathology workshop.

It would be incomplete if I did not describe the spread for lunch. The classic fish curry, biryani and the sweets were the ones which I enjoyed the most. The feel of catching up with all your friends with the unending stories in the corridors is unparalleled.

The inaugural meeting was made rich by the presence of eminent personalities Like Padmashree Sanghamitra Bandyopadhyay, the Director of Indian institute of Statistics and Bhaichung Bhutia, one of my favorite Indian footballers. The president of ISN, Dr. Sanjeev Gulati and Secretary, Dr. Shyam Bansal reported the exceptional work which ISN is doing to advance kidney care.The first day's academic events culminated in a power packed music show by Usha Uthup. She did sing the right tune too: "Hum rahe ya na rahe kal, kal,yaad aayenge ye pal...."

The second day was the best of the lot with the finest academic content and amazing speakers. It started off with the presidential address by Prof. Dr.H S Kohli in which he described how a nephrologist should be more objective in assessing the patient with the power of ultrasound.The prestigious KS Chugh oration was delivered by Dr.Amit Garg on "The renal outcomes of donors after Kidney Donation" in which he emphasized on the very low risk of renal failure post donation. Dr.Camille Kotton enlightened all of us with a very crisp talk on pre-transplant evaluation and vaccination in which she also focused on the South Asian guidelines on transplant infections. Dr. Michelle Josephson, the president of the American Society of Nephrology spoke about the holistic management of a failing renal allograft. Dr. Masaomi Nangaku, the president of the International Society of Nephrology who has done tremendous work in anaemia in chronic kidney disease delivered a talk on the same topic. The theme-based discussion on recent updates of glomerular disease was one of the most concise sessions delivering the recent advancements about a wide range of glomerular diseases in a capsule format. Toxins and kidney was another theme-based discussion which had lots of discussion and interactions. The quality of free papers and mini oral presentations were also very good.

Dr Vidya Acharya oration was delivered by Prof.Narayan Prasad on a basic science topic of pharmacogenomic aspects of steroids and calcineurin inhibitors. The most awaited session of the second day was the carefully crafted quiz under the leadership of quiz masters: Dr. Sanjeev Nair, Dr. Mayuri Trivedi, Dr. Priti Meena and Dr. Arun Kumar.The second day also had a very peppy end with Shilpa Rao's performance in the lawns.

I made a resolution to look into the frailty of my patients after the talk by Dr. Dory Segev on the third day, in which he emphasized that frailty is a state of decreased physiological reserve. The talk by Prof. Nangaku about innovations in nephrology where our lab could be in the spectacles we wear and creatinine could be monitored from the tears, sent us to a different world of unlimited possibilities. Dr. Bakris' talk on management of hypertension focused in initial 2 drug combination therapy and he took a sneak peek at the emerging antihypertensives like Oceduranone, Aprocitentan and Baxdrostat. Prof. RK Sharma delivered the JCM Shastri oration, where he described his kidney transplant journey. The third day came to an end with a loud ' Mujhko bhi to lift kara de'from none other than Adnan Sami. ISNCON23 did lift our spirits and knowledge.

The last day of the conference was enriched by an amazing clinicopathologic discussion where Prof.Dipankar Bhowmik discussed a case of dialysis dependent renal failure with cranial nerve palsies, polyradiculopathy, meningitis and pericardial effusion. Prof. Ritambhra Nada unfurled it as a case of dense deposit disease with diffuse thrombotic microangiopathic changes involving the nervous system.The final session of the conference was on the latest advancements and clinical trials which happened in the various fields of nephrology in the last one year.

I must mention a few words about the social media team, which was led by Dr Arvind Canchi, who did an amazing job in delivering the content of the conference beyond the walls of the halls to the whole world.

It takes herculean efforts to organize a conference of such quality. I thanked the organising chairman Dr. Arup Dutta , organising secretary Dr Saubhik Sural and the whole team behind this academic extravaganza before taking my flight back home. The hospitality, warmth and academic content during the conference was unparalleled. Now I understand better why this place has produced so many Nobel laureates.

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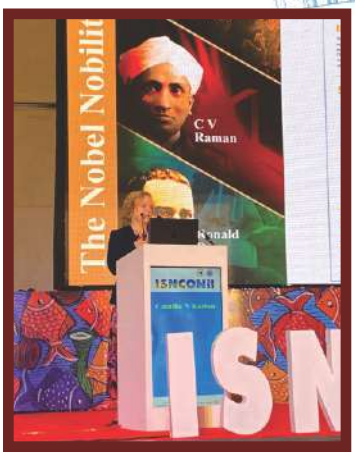
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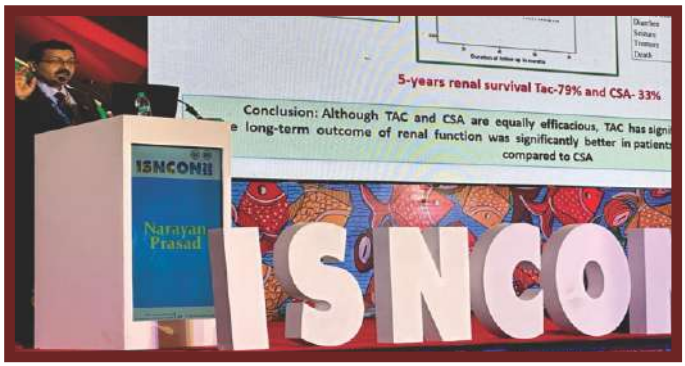
5-years renal survival Tac-79% and CSA- 33%
Conclusion: Although TAC and CSA are equally efficacious, TAC has
long-term outcome of renal function was significantly better in patient
compared to CSA
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Kolkata

KARMA & DHARMA

Random Reflections with malice for None

In the General Body meeting at ISNCON Kolkata, a member of ISN asked the Secretary of the society as to why he was not selected as a chairperson in any of the sessions during the 4-day annual conference. The discussion did appear somewhat amusing when the secretary was telling him that he should not ask for such a favor / pleading for himself (meaning it is a prerogative of the scientific & the organizing committee.

Back in Delhi, with cold wintry days, one evening over a glass of wine, I randomly reflected on this discussion in the General body and it turned out to be more serious than I had thought. While my reflections on this topic are totally personal and also account for that I have passed through the journey of ISN longer than most of you have.

How does an ordinary member of a Society create an impact in the society? A member does not have to be a speaker / chairperson to create an impact. A member can be highly impactful by asking incisive, precise, thought-provoking and probing questions or by making insightful & relevant comments. This would surely require continued academic pursuit by the member. However, many members in the audience who have questions to ask do not get an opportunity to do so because either the chairpersons (now 3 in each session) have consumed time by asking their own questions and time keepers on the floor close the session & not allowing any further discussion. While keeping to time is important but it is more important that the audience gets the opportunity to clarify doubts and ask questions. The scientific committee should see that the scientific programme is not too cramped. Speakers & Chairpersons should also be evaluated on the parameters of encouraging audience participation and discussion. Every session needs to have enough time for discussion so that members in the audience can ask questions or make comments. Obviously, the type of the questions and the comments will define the person. One should do one's duty and not worry about the reward. ("Action is thy duty; reward is not thy concern" on principles of what is said in Bhagvad Gita). A member's Karma should be active deliberation and participation in the scientific sessions and making an impactful presence.

The Scientific Committee and the organizing committee also have a Dharma to follow. They should ensure a scientific programme which allows high quality discussion on the subject by well selected speakers who are given enough time for their topic and also are advised to leave allotted time for discussion. Chairpersons should ensure discussion from the audience, before they ask their own questions.

The scientific committee should deliberate also as assiduously on the selection of speakers & chairpersons for the meeting so that they do their Dharma well and with members doing their Karma, one hopes that in future general body meetings, such a question does not arise.

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Unleashing hope: Navigating the challenges for renal transplant in ESRD patients on Anti-tuberculous drugs

Patients with End stage renal disease (ESRD) are at higher risk of developing tuberculosis (TB) than the general population because of the lack of cellular immunity. In India, the incidence of tuberculosis in ESRD and Renal transplant patients are 8.7-13.6% and 12.3-14% respectively. Treatment of renal transplant recipients with tuberculosis is difficult due to the drug interactions between the immunosuppressive medications and Anti-tubercular (ATT) drugs. The intricate dance of immunosuppression in renal transplant recipient creates a fertile ground for the tuberculous bacterium, which may strike anew or relapse. Even though most of the studies and research guidelines mention about the treatment of latent TB in renal transplant patients, there is paucity of studies and guidelines regarding the ideal time of renal transplant in patients on ATT.

The retrospective study done by Gadde AB et al compared the outcome of renal transplant in patients with TB on ATT vs those without TB at the time of transplant. Of the 1729 renal transplantation done during the study period from 2014-2020, 71 renal transplant recipients were on ATT at the time of transplant. They were compared with the matched group of patients who were not on ATT at that time. The mean age of the population with TB and without TB were 39.78±11.9 and 40.15±11.7 years respectively. There was no significant difference in the baseline demographic characteristics between the two groups except longer dialysis vintage and history of previous immunosuppression use in patients with TB group.

The indications for starting ATT were majorly TB lymphadenitis (61.9%) and TB pleural effusion (15.4%). Most of the patients received 4 drug regimen including rifampicin in intensive phase and 2 drug regimen in continuation phase. All the continuation phase regimen given post transplant were rifampicin free. The mean duration of ATT was 12.2 months. All patients were followed up for a minimum of one year after completion of ATT. There was no significant difference between the two groups in terms of patient survival, graft survival, Biopsy proven acute rejection (BPAR). No patient had reactivation of TB on follow up. The study concluded renal transplantation can be performed in ESRD patients with TB on ATT without deleterious effect on patient, graft survival and disease recurrence.

The limitations of this study are its small sample size and its retrospective nature. Most of the patients were TB lymphadenitis (61.9%). Whether similar strategy of doing renal transplant after intensive phase regimen applies to patients with miliary or disseminated tuberculosis remains inconclusive. There was also no uniformity in the drug regimen and duration of TB treatment.

Usage of Rifampicin (RIF), a cytochrome P450 3A4 enzyme inducer, accelerates the metabolism of CNI, thereby increasing the risk of acute rejections to 30%. This interaction is sometimes unpredictable, as it can reduce the CNI levels by 2 to 5 times. Rifabutin can be used (5mg/kg/d) instead of Rifampicn, as it is a less potent inducer and also equally efficacious. This increases cost significantly, with need for frequent CNI level monitoring.

The avoidance of rifampicin in treatment regimen post transplant make the immunosuppression regimen easier as the drug interactions and chances of rejections are less. The approach of completing rifampicin-based intensive phase (minimum of 8 weeks) before transplant and continuing rifampicin-free 2- to 3-drug therapy (including Isoniazid, ethambutol and either fluroquinolones/pyrazinamide) post transplant for 12 months gives the advantage of bactericidal effect of rifampicin with avoiding risks related to immunosuppression interactions in post transplant phase. Similar approach was also recommended by the South Asian Transplant infectious guidelines panel for Solid Organ recipients and also by Varughese et al except in special situations.

Another recent study from India by Gupta et al used a levofloxacin-based regimen (without RIF) in their patients after transplant, and they were successful in full remission in more than 93% of patients. Part YS et al observed no recurrence in patients who received >12 months of treatment, irrespective of whether the treatment regimen included rifampicin. Also, this study showed that the only factor that was significantly associated with greater recurrence of TB was the duration of treatment. The above observations brings hope for the ESRD patients with tuberculosis to proceed with the renal transplant after completing RIF based

intensive treatment and prolonging the continuation phase for 12 months with triple drug regimen after renal transplant.

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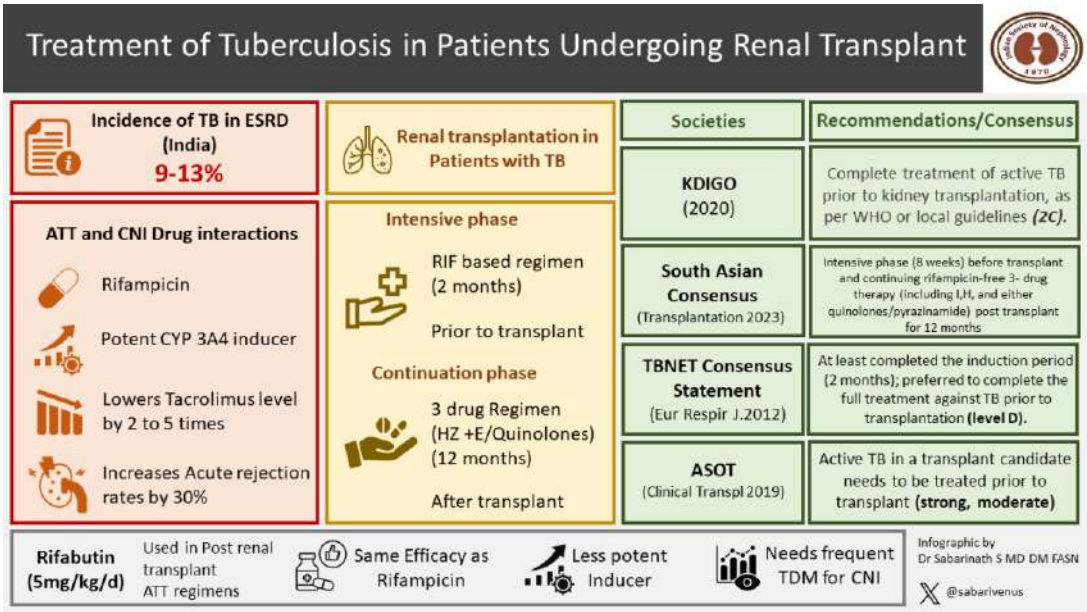

Is Letermovir Legitimate Enough to Replace Valganciclovir for CMV Prophylaxis in High-Risk Kidney Transplant Recipients? ?

In the realm of kidney transplantation, effective CMV prophylaxis is pivotal for patient outcomes, particularly in regions like India where CMV prevalence is notably high. CMV infection remains a significant concern in India, mirroring the global patterns with high seroprevalence and posing serious risks in kidney transplantation, including graft loss and increased morbidity and mortality.

Valganciclovir, a well-documented oral prodrug of ganciclovir, is the standard ~~for~~ CMV prophylaxis in kidney transplant recipients. Its efficacy is established in both universal and preemptive strategies. In India, the dosage of valganciclovir is adjusted according to renal function and patient risk factors, adhering to international guidelines. The recommended dose is 900 mg once daily, with duration depending on the transplant type and donor-recipient CMV serostatus. Some centers use a lower dose of 450 mg once daily in intermediate-risk recipients (CMV Seropositive-R+).

Letermovir, a CMV DNA terminase inhibitor, has recently gained FDA approval for renal transplant recipients. Initially approved for CMV-seropositive recipients of allogeneic hematopoietic stem cell transplants, letermovir is recommended at a dosage of 480 mg once daily, starting between day 0 and 7 post-transplant, and continued through day 200 post-transplantation. It is contraindicated with pimozide or ergot alkaloids or when pitavastatin and simvastatin is co-administered with cyclosporine. Importantly, no renal dose adjustment is required. Metabolized by P-glycoprotein/ABCB1, letermovir represents a significant advancement in CMV prophylaxis.

A pivotal study published in JAMA evaluates letermovir administered concomitantly with acyclovir against the standard care, valganciclovir. The Phase 3 study involved 589 adult CMV-seronegative kidney transplant recipients (CMV D+/R-). This robustly designed randomized (1:1), double-blind, double-dummy, noninferiority trial reflects the real-world scenario with its stratification based on lymphocyte-depleting induction immunosuppression.

The study demonstrated letermovir's non-inferiority to valganciclovir in preventing CMV disease, with a notably lower incidence of leukopenia or neutropenia suggesting a safer profile for patients at risk of these complications. The absence of antiviral resistance in the letermovir group is particularly advantageous, given the challenges of long-term

antiviral administration. Safety profiles favoring letermovir also suggest a higher patient adherence potential due to fewer hematologic side effects.

However, the study's predominantly White male demographic and lower induction immunosuppressant compared to US registry data, raise questions about its generalizability. Additionally, the study was not designed to detect differences in critical endpoints like graft loss or death. The practical implementation of letermovir, considering cost implications and insurance coverage, remains crucial for its adoption as a standard prophylactic agent. Its specificity for CMV, without activity against other herpesviruses like HSV and VZV, necessitates additional antiviral prophylaxis, contrasting with ganciclovir's broader spectrum.

In summary, the study positions letermovir as a viable, potentially safer alternative to valganciclovir for CMV prophylaxis in high-risk kidney transplant recipients. This implies a shift in the prophylaxis paradigm, especially for patients who are at risk for or cannot tolerate the hematologic side effects of valganciclovir. It will also be useful in case of valganciclovir resistant CMV infection. While its efficacy and safety profile are compelling, clinicians must consider long-term outcomes, costs, and demographic applicability. Future research focusing on a more diverse patient cohort and longer follow-up is essential to fully endorse letermovir as the prophylaxis of choice, potentially leading to updates in current prophylaxis guidelines. This study represents a significant step towards a more individualized approach in CMV management.

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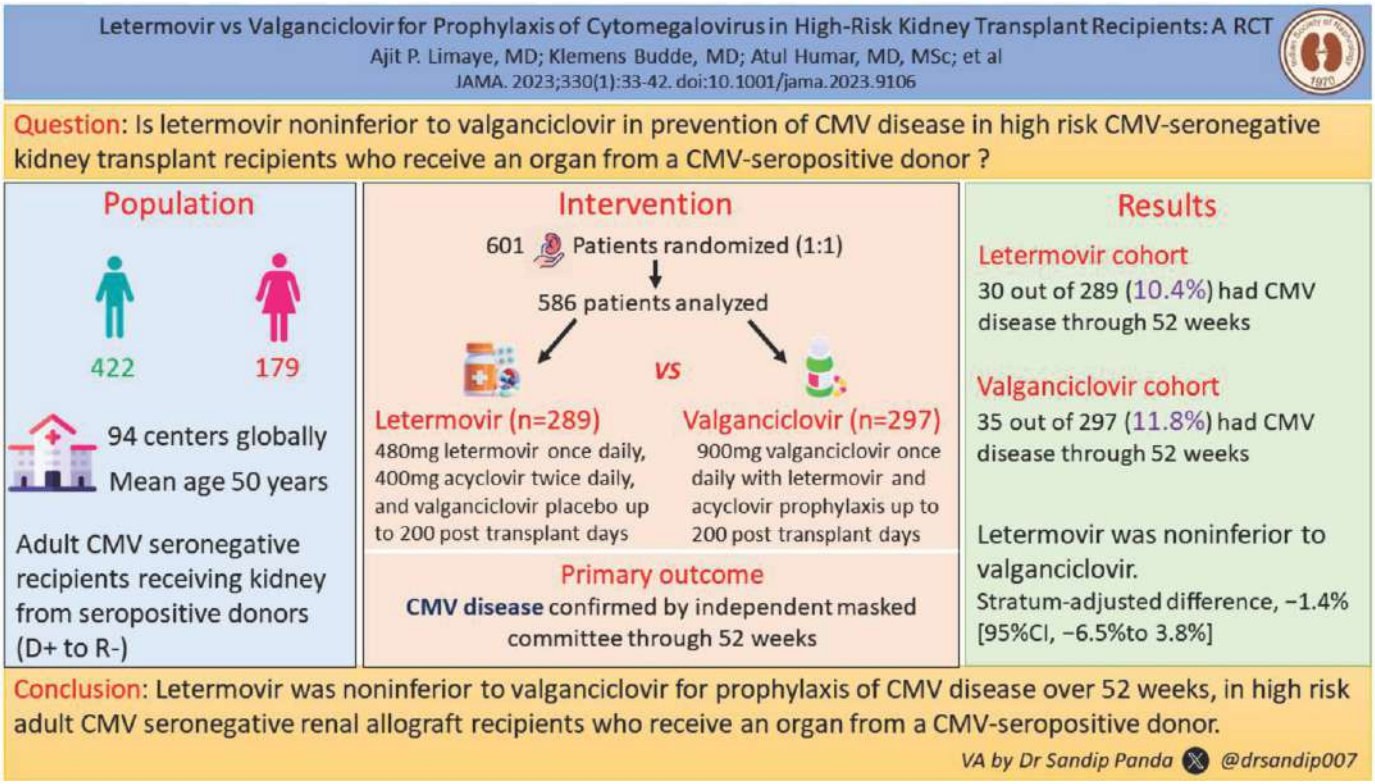


This enigmatic bacillus is named after its discoverer Edmond Nocard in 1888. The great mimicker, Nocardia is three rolled into one - Bacillus, Tubercle, and Fungus. Even though the distribution of this microbe is ubiquitous, it is more of an opportunistic pathogen causing dreaded infection in immunosuppressed individuals. It affects the respiratory, cutaneous and central nervous systems, with cutaneous manifestations seen predominantly in immunocompetent individuals. The diagnosis is often delayed owing to the non-specific clinical presentation, presence of co-infection and slow growth of the organism.

The havoc caused by this opportunistic infection came to light with the systematic review done by Filice et al, who compared the incidence of Nocardiosis among patients living with HIV/AIDS (PLHA), bone marrow transplantation (BMT) and solid organ transplantation (SOT) recipients with the general population of US, France and Australia. They reported an incidence of 608, 128, 1122 and 0.35-0.4 cases per 10^5 person years respectively.

The reported incidence of Nocardiosis in SOT recipients ranged from 0.4 -2.6%. Till date, 3 large studies have delved into the incidence of Nocardiosis among SOT recipients, the European multicenter retrospective case-control study by Coussement et al, single center study by Peleg et al and Majeed et al. All three studies established an incidence ranging from 0.7 - 2.65 with lung transplant recipients having the highest risk.

The recent article by Gaurav Bhandari et al reported a myriad of post kidney transplant Nocardiosis cases from the last decade 2010-2019. Of the 16 cases identified in this retrospective cohort, pulmonary manifestations were seen in three-fourths (75%) of the study subjects with cutaneous form seen in one patient(6.25%). CNS and disseminated forms of the disease were noted in 3 subjects (18.75%). This data is similar to the previous large scale studies done by **Coussement** et al, **Peleg** et al and **Majeed** et al. *Nocardia farcinica* was the most common agent isolated, in congruence with the species identified from National Culture Isolates by Rudramurthy et al. This species also led to more disseminated disease and exhibited resistance to cotrimoxazole therapy.

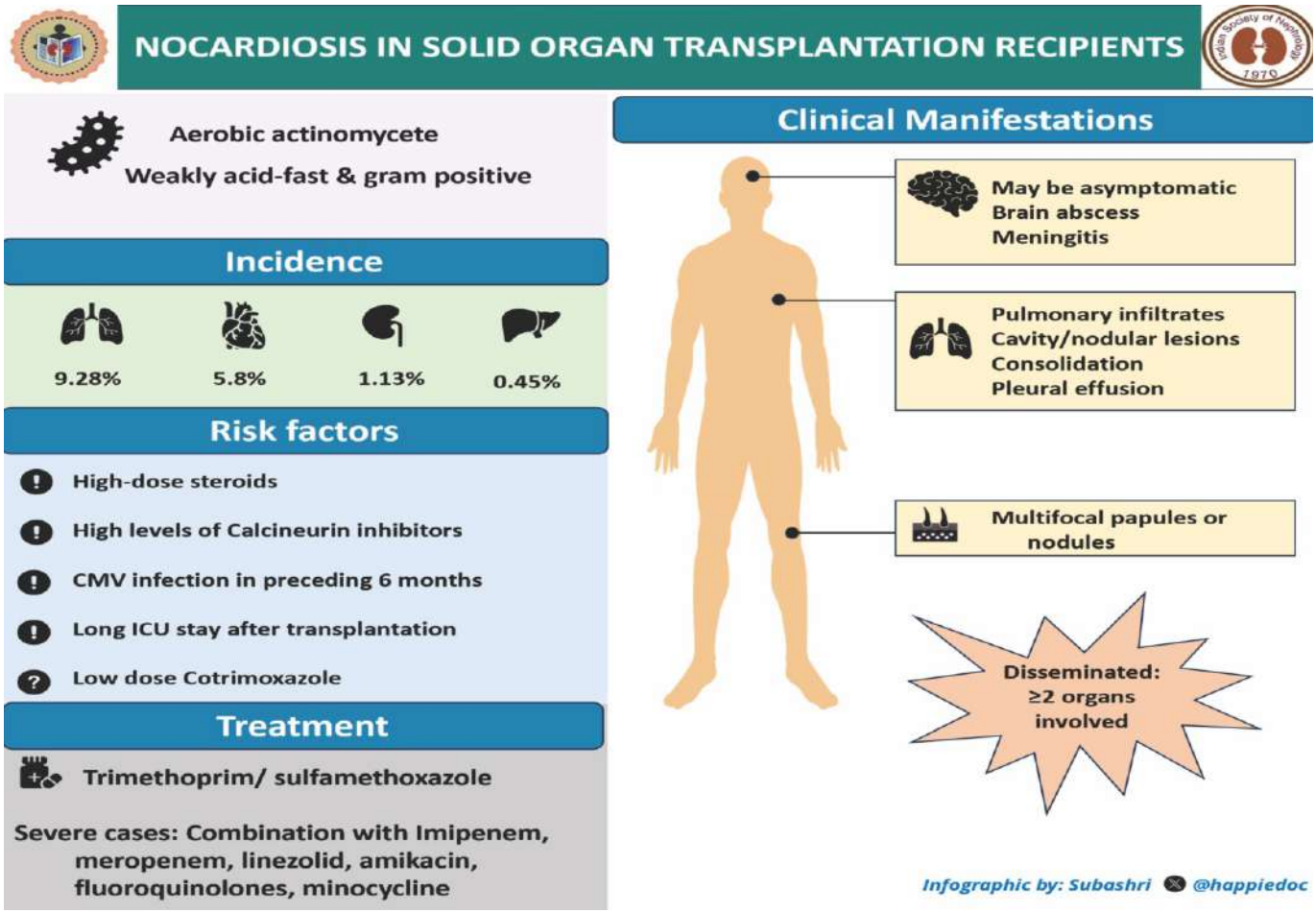
The risk factors established in the above mentioned studies were high calcineurin inhibitor levels (C0 tac > 10 ng/ ml and C0 cysA > 300 ng/ml) and high-dose steroids. In addition, Coussement et al reported recipient age at diagnosis and length of ICU stay as independent risk factors. In the study by Gaurav Bhandari et al, two patients (12.5%) had recently used anti-rejection therapy. However, calcineurin inhibitor levels were normal among these patients (-mean C0Tac-5.08 ng/ ml). They could not report the magnitude of risk in the absence of matched controls in the study.

Trimethoprim- Sulfamethoxazole (TMP-SMX) therapy is generally used both as prophylaxis and treatment for Pneumocystis jiroveci in post transplant patients. However, both Coussement et al and Peleg et al did not find low dose cotrimoxazole to be protective for Nocardia infection. Around 35-40% of infected patients were on TMP-SMX prophylaxis in these studies. Further, Coussement et al went on to show that 80% of breakthrough cases on TMP-SMX prophylaxis were sensitive to cotrimoxazole later by microbial sensitivity analysis. In the study by Bhandari et al, nine (56.25%) patients had received low dose Septran prophylaxis.

The association between CMV disease and Nocardiosis is variable. In the study by Peleg et al and Kursat S et al, CMV was found to be an independent risk factor for incident Nocardiosis whereas Coussement et al did not find such an association. In the study by Bhandari et al, one-fourth of the study subjects had CMV infection in the preceding six months.

Therapy for Nocardiosis depends on the severity and sensitivity of the infecting strain. Mild to moderate disease mostly requires monotherapy, however severe disease requires a combination of two or three agents. Commonly used antibiotics were TMP-SMX, imipenem, amoxicillin clavulanate, amikacin and minocycline. In the study by Bhandari et al, TMP- SMX monotherapy was used in one-fourth of the patients. Imipenem + Linezolid combination was used in seven (43%) patients and Imipenem + amikacin was used in five (31%) patients. The study reported a mortality rate of 31% (5/16 patients) similar to the Indian data reported by John et al. Further, patients with disseminated disease and CNS infection had 100% mortality.

Summing up all, when you see an ominous cavitatory lesion in a post-transplant patient, before you reach out for amphotericin B, pause and consider Nocardia. Furthermore, analysis of the risk factors, species identified, their virulence and treatment outcomes should be done.



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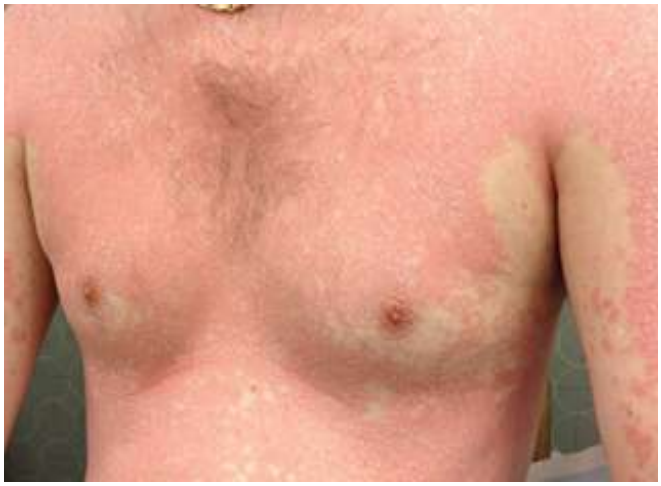
KNOW YOUR ANTIBIOTICS

Question 1

32 years lady, a recently diagnosed ESRD, was initiated on hemodialysis with right IJV tunneled cuffed catheter (TCC). During one of the dialysis, she developed high grade fever with chills after two hours of initiation of dialysis. She had erythema at TCC exit site, leucocytosis and her paired blood cultures were sent. A possibility of catheter related blood stream infection was considered and she was empirically given 1000mg of inj vancomycin as slow IV bolus over 15min. She developed fever with chills, flushing over face, pruritus and diffuse erythema over the body and hypotension, as shown in the figure. What is the likely cause and how can it be managed?

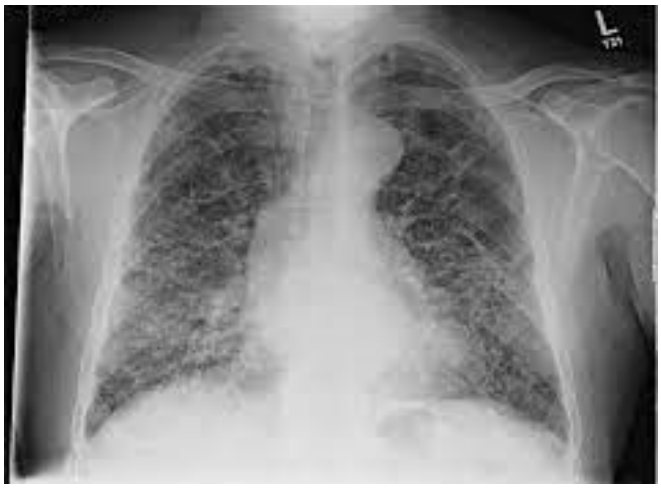


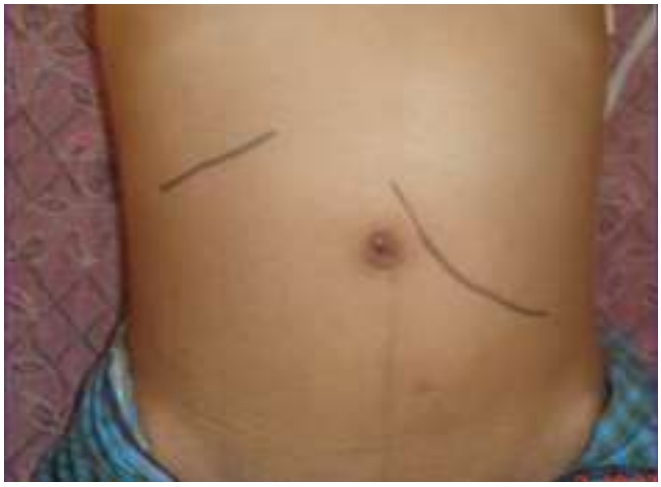
Question 2

44 years old patient of ESRD on continuous ambulatory peritoneal dialysis (CAPD) presented with turbid CAPD fluid with fever and pain abdomen, and was detected to have 400/µL cells in PD fluid with predominant neutrophils. He was empirically initiated on intraperitoneal (IP) inj vancomycin 1000mg once in 5 days and inj amikacin 125mg once a day. He promptly responded, with clearing of PD fluid within 48 hous and cell count falling to 80/µL. After 4 days, his culture reports showed Pseudomonas sensitive to aminoglycosides, colistin. His antibiotics were changed to IP amikacin and ceftazidime 1000mg given once a day during the long night dwell. He developed turbid fluid on the next day. The cell count which was initially normal increased to 300/µL after 2 days. What could be the likely cause of this deterioration?

Question 3

55-year-old diabetic lady, had three episodes of culture positive (E Coli) urinary tract infection (UTI) over a period of three months. She was managed with sensitive antibiotics each time and was thereafter given nitrofurantoin prophylaxis for 6 months. She remained infection free during this time, but one month after stopping nitrofurantoin she had a repeat UTI. She was treated with sensitive parenteral antibiotics and then given nitrofurantoin prophylaxis (at a dose of 100mg OD). After two months, she developed progressive dyspnoea and dry cough (MMRC grade II) with xray chest showing the following finding. What is the likely cause.



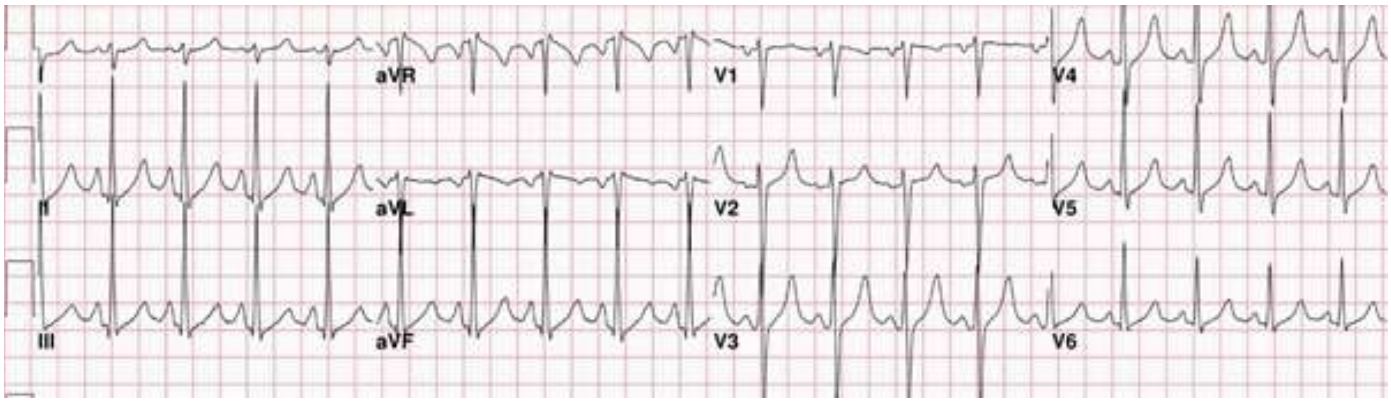


Question 4

23 year-old male, a case of steroid resistant nephrotic syndrome (minimal change disease) was on prednisone 10mg once (being tapered) and tacrolimus 2mg BD (levels optimised). He had proteinuria of 3000mg/day, serum albumin of 1.9 g/dL, and serum creatine of 1.1mg/dL. He presented with high grade continuous fever of 7 days duration, with nausea, anorexia and no localising symptoms. The abdominal examination showed hepatosplenomegaly as shown in the figure. Blood cultures showed Salmonella typhi sensitive to ceftriaxone, azithromycin, and his IgM Typhidot was positive. Other fever workup was normal. He was manged with Inj Ceftriaxone 2gm IV twice day. But he continued to remain febrile. A possibility of MDR salmonella was considered, but the cultures showed sensitivity to ceftriaxone. What is the likely cause?

Question 5

40 year-old male, a case of end stage renal disease on thrice weekly hemodialysis was undergoing desensitisation for ABO incompatible renal transplant, two weeks prior to transplant. He was given rituximab 250mg (D-14), and was started on mycophenolate 500mg BD, tacrolimus 2mg BD and tab cotrimoxazole 480mg once a day (since D-10). After 3 days, he developed leucopenia and thrombocytopenia, with serum potassium of 6.2mEq/L and ECG as shown in figure. A possibility of mycophenolate related cytopenia was considered but the sudden hyperkalemia was not explained. What is the likely cause of cytopenia and hyperkalemia.



ANSWERS

Answer 1. Red Man Syndrome due to rapid administration of injection vancomycin.

Red Man Syndrome or Vancomycin flushing syndrome (VFS) is an anaphylactoid reaction caused by the rapid infusion of injection vancomycin. It occurs due to direct and non-immune-mediated release of histamine from mast cells and basophils. The symptoms include appearance of pruritus with an erythematous rash that involves the face, neck, and upper body. It may be associated with dizziness, agitation, fever with chills, headache, paraesthesia and rarely hypotension or angioedema. It is managed with stopping of vancomycin infusion and use of anti histaminics. It can be prevented by slow infusion of vancomycin diluted in 100-200 ml of saline and given over 2 hours.

Answer 2. Patient likely developed chemical peritonitis secondary to concomitant use of amikacin and ceftazidime.

Aminoglycosides and penicillin/ cephalosporins have a risk of interaction when given together or in the same cycle, due to the potential interaction between them. This can lead to chemical peritonitis and reduction in the blood levels/ efficacy of aminoglycosides. This patient deteriorated due to chemical peritonitis and due to a fall in efficacy of amikacin, which was the sensitive antibiotic.

Answer 3. Pulmonary toxicity (pulmonary fibrosis) because of nitrofurantoin.

Nitrofurantoin may cause acute or chronic pulmonary toxicity. Acute toxicity manifests as an acute hypersensitivity occurring 1-2 weeks after drug initiation, and presents with fever and dyspnea, leucocytosis, eosinophilia, and features of consolidation; with cessation of drug being the mainstay of management. Chronic toxicity includes pulmonary fibrosis or features of interstitial lung disease, and presents in a slow progressive manner with dyspnea, dry cough, and fatigue. The diagnosis is based on exclusion of other etiology with a background of long-term nitrofurantoin use. Nitrofurantoin may also cause other toxicity like cholestatic jaundice, peripheral neuropathy, optic neuritis, dyspepsia, urticaria, rash, diabetes and others.

Answer 4. Reduced blood levels of ceftriaxone because of hypoalbuminemia secondary to nephrotic syndrome.

Ceftriaxone is a highly protein bound drug (70-90%). In a patient with hypoalbuminemia, less ceftriaxone is bound to proteins, and more ceftriaxone is free in serum. This free fraction undergoes enhanced excretion leading to reduced drug levels in body, causing a lesser efficacy. The dose of ceftriaxone for enteric fever

may range from 2gm IV once to twice a day. But in cases of hypoalbuminemia, dose has to be increased. Doses of 2-4gm IV OD-BD have been used, in assistance with therapeutic drug level monitoring.

Answer 5. Hyperkalemia and cytopenias were likely side effects of cotrimoxazole being given as once a day dose (higher dose).

Cotrimoxazole is a commonly used antibiotic for therapeutic and prophylactic purposes. The common side effect of the drug includes gastro-intestinal symptoms like nausea, vomiting, dyspnea, headache, rash and others. Hyperkalemia and cytopenias (anemia, leucopenia and thrombocytopenia) are serious side effects of the drug. The drug has a renal dose modification because of the trimethoprim component. In patients on dialysis, the drug is given in a dose of 480mg (TMP/SMX 5/20mg/kg) given thrice in week. In this case, an OD dosing of the drug led dose excess, leading to side effects.

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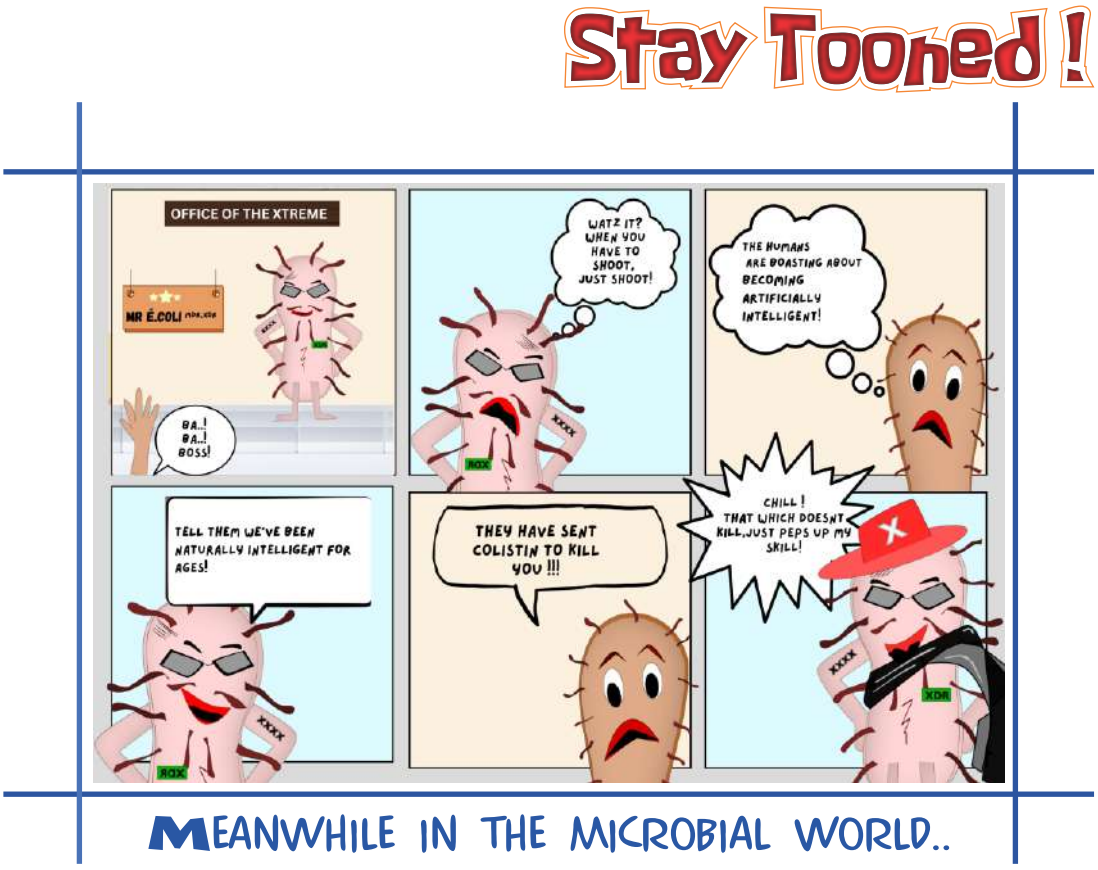


by Dr Anand Chellappan

The views and opinions expressed in the cartoon (Stay Tooned) are imaginary, and that of the cartoonist and not that of his/her employer.

Management of UTI in solid organ transplant recipients in South Asia

Asymptomatic bacteriuria

>10^5 cfu/mL 2 x MSU cultures >24h apart

Should we treat?

- ☒ Prospective trials – no benefit of Rx
- ☑ Excluded early tx
- ☑ Rx AB in early months after tx
- ☑ Screen every 2-4 weeks till 12 weeks
- ☒ After 3m → No screening/Rx for AB

Symptomatic UTI

Simple cystitis: >10^3 cfu/ml, ☑LUTS, ☒Systemic
Complicated UTI: >10^4 cfu/ml, ☑Systemic, structural/functional abnormality, indwelling catheter, stents

Remove/change catheter

Simple cystitis: Rx 7-10 days
Oral FQ, 3rd gen CS, nitrofurantoin
No other options→Oral fosfomycin

Severe: IV 2-3 weeks
3rd gen CS, pip/tazo, carbapenem
☒Carbapenem if MIC>16mg/L

Recurrent UTI

≥3 UTIs (reinfection/relapse) in the prior 12-month period; >10^3 cfu/ml

Uroflow/PVR
USG/CT – r/o structural abnormality
TRUS – r/o prostatitis

VCUG – to detect VUR
Urodynamics – bladder dysfunction

Consider 4-6wks sensitive antibiotic
Long-term NF/TMP prophylaxis →
Stop & observe for relapse at 3-6m

Frequent voiding, adequate hydration, to void after intercourse

How to collect urine sample for C/S?

MSU after antiseptic wipes to glans/perineum
If unable – straight catheter

<2wks – catheter port
>2wks – remove → MSU/ new catheter

Prevention of UTI

☒ Catheter At 3-5 days

☒ DJS By 2-3wks

6-12m TMP/SMX prophylaxis
Allergic → NF/ciprofloxacin

Gang et al. Expert Group Opinion for UTI in SOT Recipients in South Asia. IJT 2022

Abbr.: MSU midstream urine, FQ Flouroquinolone, CS Cephalosporin, NF Nitrofurantoin

𝕏 @sandyrvsdav (Dr. Sandhya Suresh)

Fungal infections in solid organ transplant recipients in South Asia

FUNGUS	CANDIDA	ASPERGILLOSIS	MUCOR	CRYPTOCOCCUS
Incidence	6.8% lung tx	2-4% kidney tx (developing countries)	1.2% kidney tx	8% of IFIs in SOT Median 16-21months
Risk factors	Abdominal tx, Re-Tx, antifungals, colonisation, hyperalimentation,	Kidney tx – COPD, graft failure, acute rejection, ↑/ long steroid use	Fungal spores from contruction, air filters, DM, Vori/Caspo use, neutropenia, long steroid	Older age, DM, cirrhosis, steroids, ATG, Alemtuzumab, Rejection
Donor screening	Bowel perforation, preservation fluid contaminated; Donor source → Antifungal 14d	Donors with active mold infection not suitable		Serum CRAG in donors with meningoencephalitis, unexplained pulmonary lesions, PUO
Diagnosis	☑ Blood C/S, MALDI ☑ β-DG, T2 Candida assay	☑ Serum/BAL GM, β-DG ☑ Aspergillus DNA PCR ☒ Blood C/S	☑ Microscopy ☒ Blood C/S ☒ Antigen tests	☑ Blood C/S, MALDI ☑ Serum/CSF Ag
Treatment	⭐ Echinocandins ⭐ Azole – interactions AmBd – nephrotoxicity ⏳ 2 weeks after clearance for Candidemia – Fundoscopy, ECHO – No prophylaxis-kidney tx	⭐ Voriconazole ⭐ L-AmB Isavuconazole ⏳ At least 12 weeks	Surgical excision Debridement ⭐ L-AmB – Colonised donor lungs or ↑↑IS → Posaconazole prophylaxis	Serial LPs ⭐ CNS, disseminated, mod-severe pulmonary: L-AmB+5-FC f/b Fluconazole ⭐ Mild-mod: Fluconazole

𝕏 @sandyrvsdav (Dr. Sandhya Suresh)

Soman, et al. Expert Group Opinion for Diagnosis & Management of Fungal Infections in SOT Recipients in South Asia. IJT 2022

Managing the complex terrain: Infections

Dr.Urvashi Khan,DNSH,Delhi

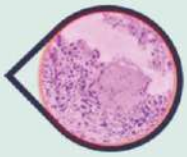
How does CKD impact the immune system?

- CKD disrupts the immune system, increasing infection susceptibility.
- Causes impaired phagocytosis, altered neutrophil function, and reduced lymphocyte function.
- Leads to cytokine dysregulation, complement system abnormalities, and immunoglobulin levels.
- Malnutrition contributes to immune dysfunction.

START

Unique challenges in diagnosing and treating infections

- Challenges include atypical presentations, immunosuppression, impaired immune response, comorbidities, renal replacement therapies, altered antibiotic management.
- Strategies include preventive measures, vigilant surveillance, timely diagnosis, individualized treatment, multidisciplinary approach.



Common infections in nephrology

- UTIs, respiratory, and bloodstream infections are common.
- Asymptomatic, recurrent, or masked due to kidney conditions.
- Immunosuppressive medications and comorbidities are more susceptible.
- Severe bloodstream infections require prompt identification and management.
- Renal replacement therapies and antibiotics increase infection risk.

Dialysis-associated Infections

- Strategies include catheter-related bloodstream, vascular access, dialyzer-associated, and peritoneal dialysis-associated infections.
- Proper catheter care, sterile techniques, and patient education are key.
- Dialysis centers should focus on hand hygiene, water quality control, antibiotic stewardship, environmental cleaning, and individualized care plans.

Transplant Related infections

- Immunosuppressive medications, surgical procedures, prior infections, donor-derived infections, hospital environments, pre-existing health conditions, age, gender.
- Common infections include bacterial, viral, fungal, protozoal, opportunistic, and parasitic.
- Balancing immunosuppression with infection prevention requires tailored regimens, regular monitoring, prophylactic medications, vaccination, patient education, and collaboration with infectious disease specialists.

Antibiotic resistance in nephrology

- Avoiding Overuse
- Selecting the Right Antibiotic.
- The optimal duration of antibiotic treatment should be determined based on the infection type and severity.
- Antimicrobial Stewardship in Nephrology.
- Interdisciplinary Collaboration: Collaboration between nephrologists, infectious disease specialists, pharmacists, and other healthcare professionals is essential for effective stewardship.

FINISH

The WINner's formula - gender advocacy, meritocracy and mentorship – Tete-a-tete with the WIN-India President, Dr Urmila Anandh

In a brave new world where diversity, inclusion and equality have become buzzwords and contributions from women have been transformative, nephrology, particularly Indian nephrology cannot be too far behind. This is where Women in Nephrology India (WIN-India), a fledgling new organisation has been making waves. But questions abound. Is there really a need for such an organisation? Are they simply making the most of the zeitgeist? What are their aims? How are they going about achieving them ?

In an exclusive interview, Dr Urmila Anandh, the President of WIN-India, sat down with Kidney Kolumns' Sanjeev Nair, to answer some of these questions. Join us as we delve into the mission, accomplishments, and the nuanced approach WIN-India takes as a women's organization advocating for gender equality.

Excerpts from the full interview can be viewed @ this link.

PS: Some of these answers have been paraphrased for space and readability.

SN : How was WIN-India envisioned? What were your motivations ?

UA : The beginnings of WIN-India trace back to Professor Vidya Acharya. She was always keen to provide a platform for women nephrologists. Prof Acharya was a pioneer of nephrology, not just for women – considering that she started one of the earliest dialysis and deceased donor transplant programmes, in the country. When I had joined St. Johns' Medical College, I was the first woman nephrologist in Karnataka – and the numbers only grew from there. I still remember a WIN-India meeting organized by Dr Arpana Iyengar in Electronic City, Bengaluru back in 2011, when several leaders of the Indian nephrology community, Profs Ravi Raju, Vijay Kher, Vivek Jha encouraged us to create a representative platform for women. From 2017 onwards, the four of us in Hyderabad (Drs Manisha Sahay, Swarnalatha, Manjusha) brainstormed over it as a nebulous concept and took it forward truly, during the Covid times, with strategic guidance from Dr Muthu Jayaraman, to debut in its Zoom avatar.

SN : In your opinion, how much of what WIN-India aims to do, requires exclusive female membership? And how successful has it been in uniting and creating a platform for youngsters ?

UA: As an organization, WIN-India is very privileged to have received unflinching support from many senior male nephrologists. Also, I would like to reiterate here that many male members are enrolled in our organization, and we encourage everyone, regardless of sex to enrol and participate in WIN-India activities – including our flagship journal, the Indian Journal of Kidney Diseases. A quick perusal will help you see as to how many young nephrologists, both male and female, have contributed to the WIN-India activities. A change that I perceive in the younger generation, is that they have shed shyness and inhibition, and their energies need to be channelized – into building good clinical and research abilities, and not just into wielding the selfie sticks at conferences.

SN : WIN-India exudes wonderful camaraderie in their SoMe presence and in conferences. Could it alienate the male members? What considerations are there for extending mentorship opportunities to any aspiring male nephrologists who might look to WIN for a platform ?

UA: It is natural for some people to feel alienated, but the work done by members of WIN-India needs to be put in the spotlight. Especially so, the mentorship framework, which has been so clearly established by Dr Arpana Iyengar. I have had three mentees via WIN, all males, I regularly mentor and share editorial and chapter-writing opportunities with many junior colleagues, irrespective of sex. Similarly, with other members of WIN-India – we feel privileged to share our experience with younger colleagues, and I strongly encourage all aspiring nephrologists to apply for mentorship with WIN-

India.

SN : An innate feature of most organizations is, whatever noble intentions they start off with, eventually they tend to devolve into an Old Boys club. How will WIN-India ensure that this doesn't happen and we don't keep seeing the same faces ?

UA : I understand what you are saying and it is our biggest fear. Our organization is currently completing the nitty-gritties of establishment and affiliation with International Society of Nephrology. We are looking for a rehaul, once we complete the first three years. Also, we look to increase our executive committee members, from the existent 8 to 16. Many of them will be fresh faces. Unfortunately, we lost our senior executive member and our very beloved, Prof Anita Saxena last year. So yes, WIN-India will have a number of fresh faces, post this August.

SN : Can you tell us about the journal of the society, the Indian Journal of Kidney Diseases. what were the challenges that you faced while bringing it out? Have male nephrologists largely been helpful or have they been adversarial?

UA : Dr Anupama YJ, the editor-in-chief is helming our journal most efficiently. Its popularity has grown, and from a phase, where we would request for articles, we are now seeing a lot of contributions across the board (again both from males and females) and I thank all of our nephrology community, who have sent us their valuable contributions for publication with us. The financial aspects need to be ironed out, from time-to-time, but that is fine.

SN : Does WIN-India actively collaborate with other organizations including those that might not be gender specific to promote a more inclusive environment in nephrology per se and Indian nephrology specifically ?

UA : We have established active collaboration with the Indian Society of Renal Transplant Pathology, the Indian Dietetic Association, and internationally, we have been instrumental in helping to start WIN-AFRAAN. We would continue to work closely with them, providing them with support and joint publications.

SN : The recently concluded ISNCON at Kolkata had a very inclusive and diverse faculty list, when compared to previous events. If other Indian organizations that represent us, achieve diversity and inclusivity, would you agree that the aims of WIN-India are achieved ?

UA: Gender demographics in Indian nephrology are fast changing, with upto 60% of new inducted trainees being women, so it will come as no surprise that diversity and inclusivity are here to stay, in organization. WIN-India stands for providing a platform for meritorious youngsters, and that need, I think, will remain, and we should strive hard to achieve this goal.

SN : Would you agree that in India at least, the binary of gender was not really a point of discussion in early leadership positions and the meritocracy debate as you would see it in the West ?

UA : You are right. Honestly, Indians are socioculturally different. Our men do not have issues with accepting women leaders, be it Madam Acharya or Indira Gandhi. For that matter, the four of us in Hyderabad (me, Drs Manisha, Swarnalatha and Manjusha) – have not faced negativity surrounding our leadership roles. The struggles faced by the likes of Prof Acharya were inherent to the times she lived in, but were not gender-related.

SN : I think that is a perfect note on which we can end this conversation today, as you stand on the shoulders of a giant like Madam Vidya Acharya.

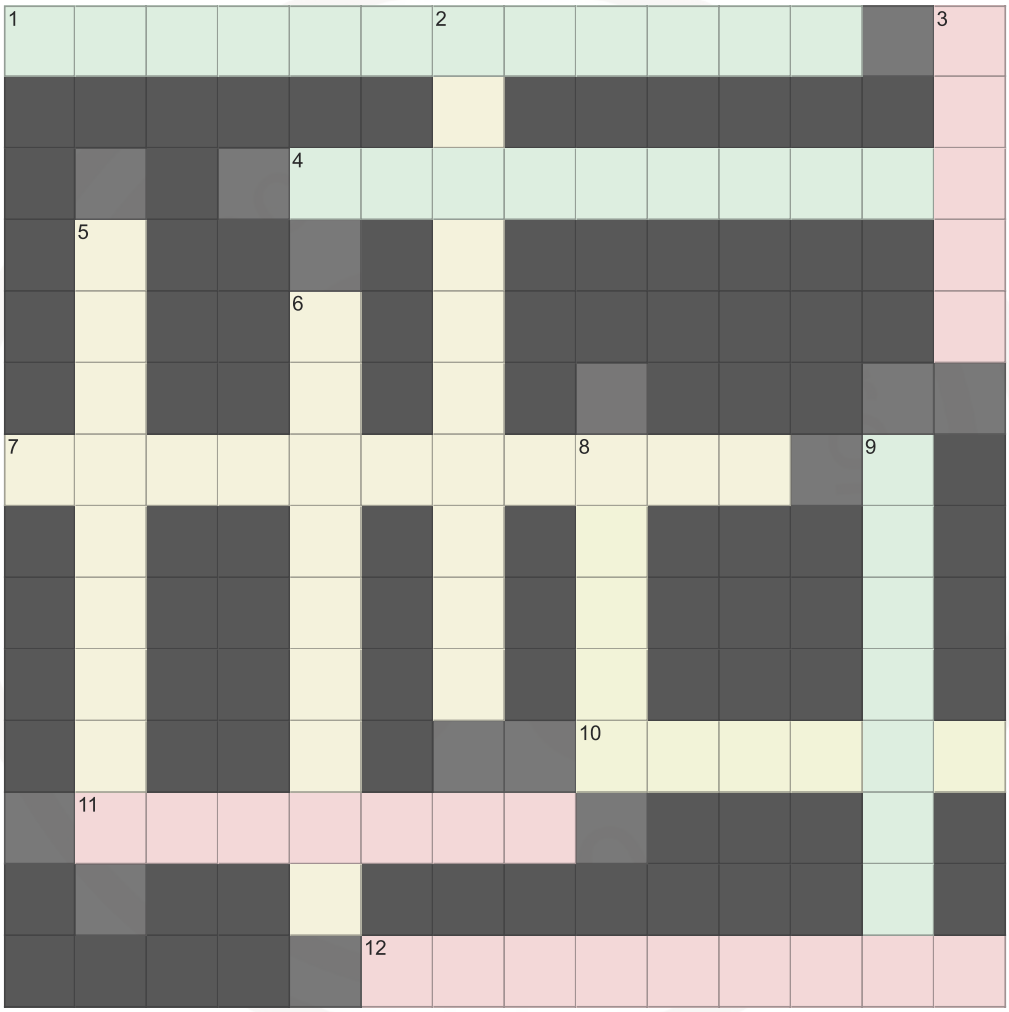
UA: Very true. And hopefully, regardless, of gender, all young nephrologists can take inspiration from the work and the pioneering spirit that Madam has shown us throughout her career.

SN : That's true. Thank you so much for taking the time out.

UA: Thank you.

Microbial Mysteries

By Dr Ambily K.
Dr Sandhya Suresh,
Dr M Subashri & Dr Pallavi Prasad



CROSSWORD JANUARY 2024 EDITION

Across

1) Micro-organism which has a Banff classification
4) Drug used in the treatment of Strongyloidosis
7) Opportunistic infection caused by gram positive and weakly acid-fast positive, aerobic actinomycete
10) Multicentric trial on severe diarrhoea
11) Silver stain used for detection of Spirochaetes
12) Presence of this agent in plasmalyte can cause false positive galactomannan

Down

2) Organism which typically causes hemorrhagic cystitis in KTR
3) This antigen is responsible for maintaining extrachromosomal episome in EBV infected cells
5) Causes acute and chronic diarrhoea in kidney transplant recipient (KTR)
6) Used for resistant and refractory CMV disease
8) Patients treated with voriconazole may have nephrotoxicity due to this
9) Aspergillus shows this sign on CT scan of chest

Answers to the Crossword are available on page 27

Residents' Corner

How ISNCON helped me as a Nephrology Fellow!

Benefits of attending a conference or an academic gathering as a nephrology fellow are numerous, viz., interactions with the Experts, Faculties, Peers from other Institutes gives an opportunity not only to learn from their insights but also to share our views, ideas through networking leading to enhanced skills and knowledge.

53rd Annual Conference of the Indian Society of Nephrology (ISNCON 2023), held during 14th to 17th December 2023, at the ITC Royal Bengal in Kolkata, gave me a remarkable opportunity to update my knowledge, to enhance my skills, and to expand my network in the specific areas of expertise.

The pre-conference workshops on Genetics and kidney diseases, acid-base electrolytes, renal histopathology, research methodology and scientific writing, interventional and critical care nephrology, all had pertinent and relevant topics to be discussed. Personally, I attended the research methodology and scientific writing session and the session on Critical care nephrology. The research methodology session was particularly a highlight of this conference as renowned experts explained and simplified how we should approach developing a research question; devise a precise protocol and all the nitty-gritty involved in this.

It was a privilege to interact with the Experts, who have authored the guidelines and chapters in our textbooks. Personal interactions with them were a rare and valuable opportunity.

The plethora of lectures and discussions which went on simultaneously made it difficult for us to choose which one to attend. The sessions on glomerular diseases, environmental changes and CKD and practice changing updates were very informative and useful. The sessions on newer interventions for AVF patency were also illuminating. Many of my fellow residents presented their work as oral papers and poster presentations. These not only gave one a new or fresh perspective on areas where one can work or contribute, these also fostered possibilities of collaborative research. When you see the new and inspiring works being done by your colleagues it boosts your morale too. This time, additionally, I had the privilege to be a part of the social media team under the captaincy of Dr C. Arvind. For me the highlight of the conference was the 'Renal Riddles' quiz competition. A challenging preliminary round was followed by a main round which had a few very interesting stages apart from the conventional buzzer and rapid fires which had me and my teammates hooked. We were lucky to be judged the first prize winners although all the other teams gave us a tough competition.

One beautiful thing about the conferences are the Gala evenings where the faculties interact with us residents, teachers who have been our examiners, their stern gaze changes into a loving embrace as we discuss

Resident doctors image created with the assistance of AI from Craiyon.com

things over great food.

I always look forward for such platforms and ISNCON being the most important and biggest of these platforms in our country. I certainly am waiting eagerly for the next one and the collaboration with WCN makes it a much more of a grand event.

Dr. Aniruddha Dutta DNB
Nephrology Fellow, I.P.G.M.E.R
& S.S.K.M.H. Kolkata, W.B.

The Dangling Dancing Thrombus

A 57-year-old male was seen for extrusion of the cuff of his 23 cm right internal jugular vein [RIJV] tunneled cuffed hemodialysis catheter [TCHC] [Figure 1]. He was diabetic, hypertensive and a case of chronic kidney disease on maintenance hemodialysis since October 2019.He had a failed right radio cephalic arteriovenous fistula in 2021.

His dialysis had been undertaken through a right internal jugular vein tunneled cuffed hemodialysis catheter. Blood flow was 250 ml/minute, transmembrane pressure of 60 to 80 mm of Hg and venous pressure of 100 to 120 mm of Hg.

The patient was planned for TCHC removal and insertion. Under fluoroscopic guidance, the catheter was removed while injecting an ionic contrast agent. Venography of the RIJV, as well as the superior vena cava [SVC], showed a fibrin sheath and a mural thrombus [Figure2-4].

Despite continuous negative pressure aspiration some part of the thrombus was left behind which was found to be dangling from the vessel wall [Figure 5-7].

A new 23 cm right internal jugular vein TCHC was inserted. The procedure was uneventful. Good flows were documented in both lumens and injected contrast did not show the presence of a fibrin sheath or thrombus [Figure 8]. Hemodialysis was performed without complications and the patient was discharged the same day.

Discussion

Tunnelled cuffed hemodialysis catheters are used as vascular access if an arteriovenous fistula [AVF] or arteriovenous graft [AVG] is not created or has not matured for hemodialysis. Both insertion and removal of TCHC have their own set of complications. In most cases, the TCHC is removed bedside under local anesthesia once an AVF or AVG is mature or if another modality of renal replacement therapy [RRT] is opted for or if RRT is no longer required.

After painting and draping the skin from the exit site to the insertion site anesthesia is given along the tunnel from the exit site to the cuff position. The TCHC is removed by blunt dissection with the help of an artery forceps separating skin, subcutaneous tissue and the fibrin sheath engulfing the catheter and cuff. Both lumens are aspirated to avoid any dislodgement of a clot at the tip of the catheter. With a gentle pull and patient in a supine head low or Trendelenburg position performing Valsalva maneuver or during active expiration, the TCHC is removed. The TCHC should be inspected to ensure it was removed intact with the cuff. Pressure is applied at both entry and exit sites to ensure the bleeding stops. If necessary, stitches are taken at the exit site with non-absorbable sutures. After removing TCHC exit site is covered with an occlusive dressing and antibiotic ointment.

While removing a TCHC one must be aware of the common complications such as bleeding, wound infection, air, and venous embolism and TCHC migration. Air embolism may be asymptomatic and self-limited or may present as dyspnea, chest discomfort, syncope, right heart failure, hemodynamic shock and cardiac arrest. Risk factors include volume depletion, sitting position and deep inspiration during TCHC removal. Failure of the tunnel to collapse, catheter fracture or open catheter hubs are also risk factors.

Thrombosis associated with a TCHC can be either a fibrin sleeve, an intraluminal thrombus or a mural thrombus. A ball valve phenomenon may be seen with a catheter tip thrombus where aspiration will be cumbersome but the return of blood is smooth. While removing the TCHC clots at the tip of the catheter can detach and embolize causing pulmonary embolism. Majority of these clots go undetected and are asymptomatic but if a patient develops dyspnea, hypoxia, cough, pleuritic chest pain or arrhythmias one must keep the possibility of this diagnosis in mind.

Conclusion

Every vein is a precious resource in dialysis patients. As this case depicted there may be a thrombus which does not occlude the lumen completely and hence

may remain asymptomatic. One must follow all precautions to avoid any complications when removing a TCHC and try to cannulate the same vein if possible.

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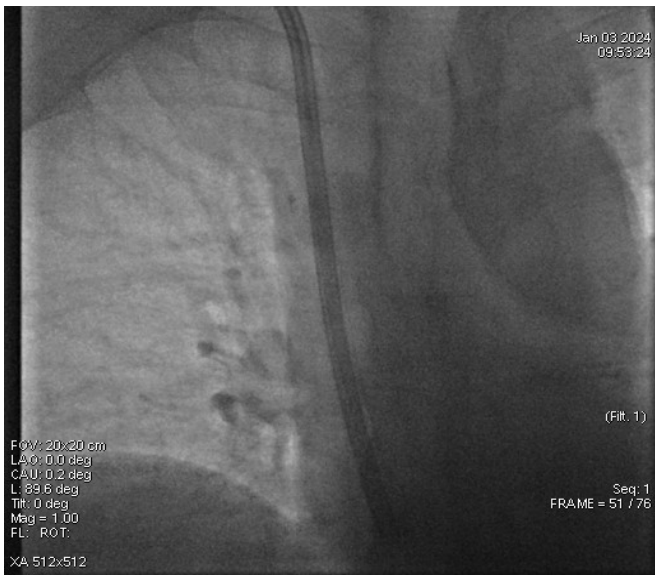

Figure 1 Indwelling RIJV TCHC

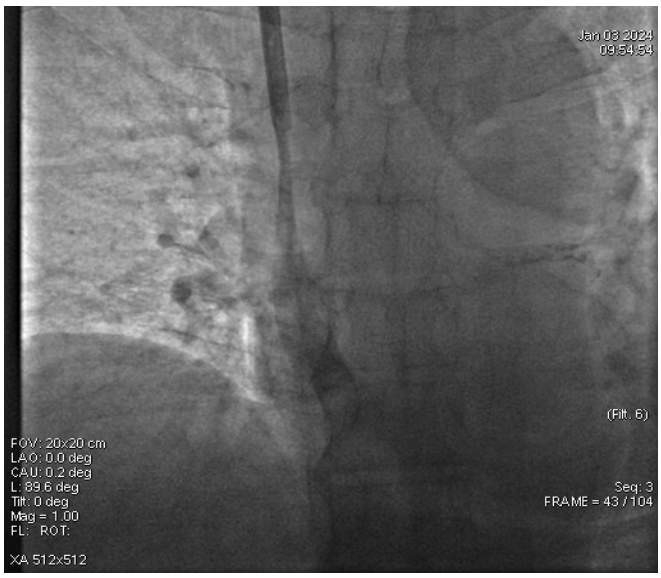

Figure 2 Shows a fibrin sheath

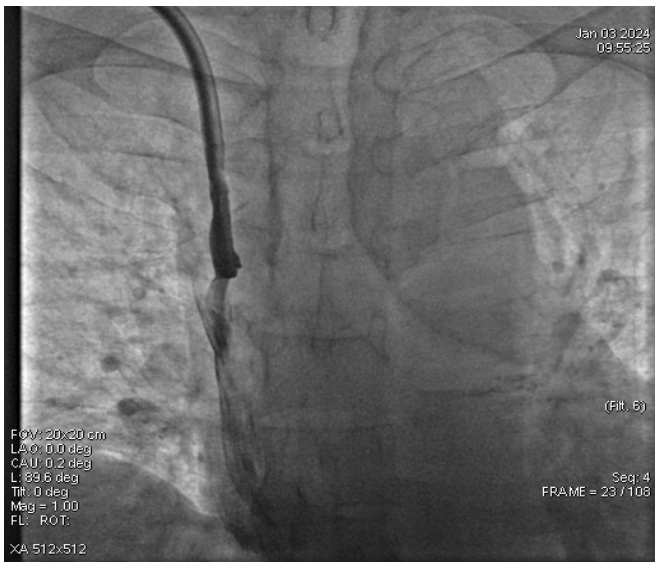

Figure 3 Shows a mural thrombus extending from the tip of the TCHC into the SVC.

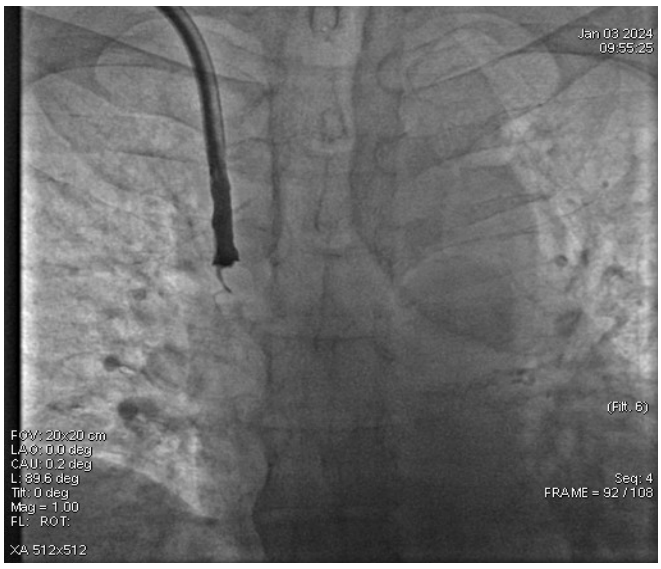

Figure 4 Shows a mural thrombus extending from the tip of the TCHC into the SVC.

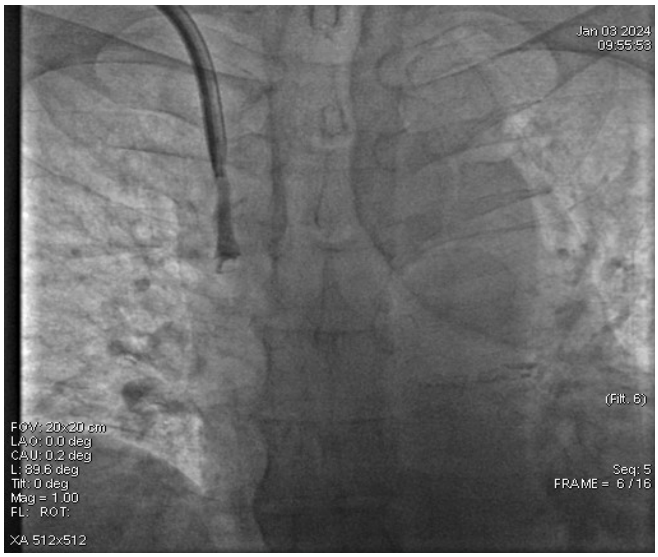

Figure 5 Shows the mural thrombus dangling from the tip of the TCHC

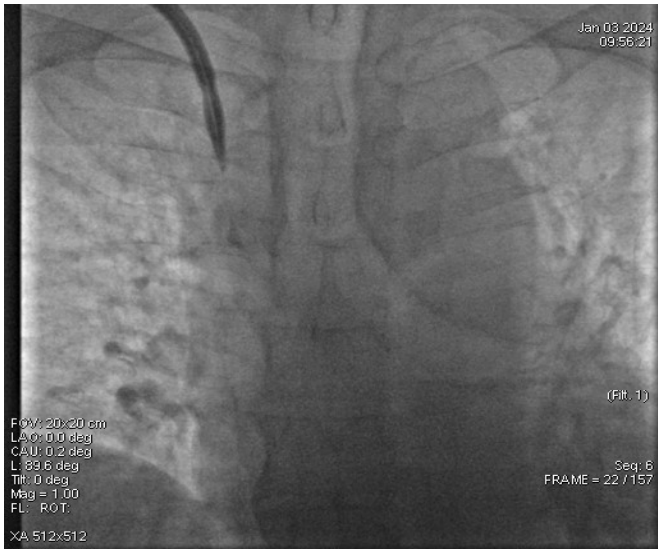

Figure 6 Shows remnant of the mural thrombus in the SVC

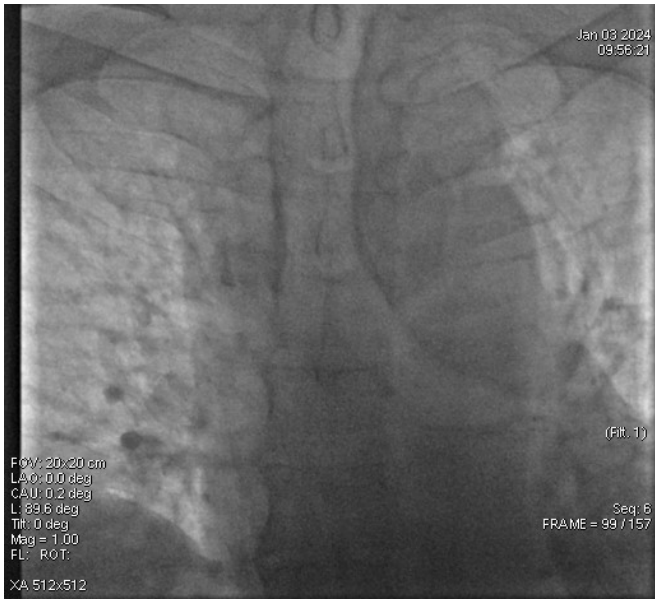

Figure 7 Shows remnant of the mural thrombus in the SVC

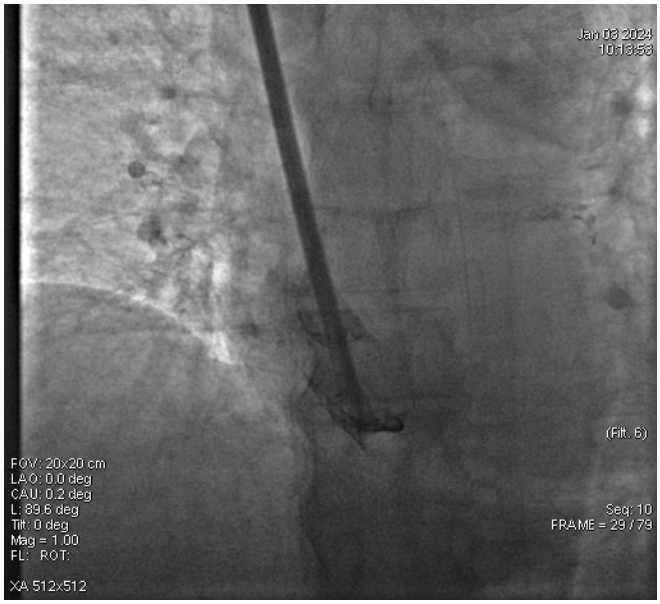

Figure 8 Shows newly inserted RIJV TCHC

ISN CROSSWORD ANSWERS

ACROSS

1. Micro-organism which has a Banff classification ANSWER - POLYOMAVIRUS. In 2018, a retrospective analysis from 192 patients helped develop the Banff working group classification for BKV nephropathy. It is classified as polyomavirus nephropathy classes 1-3 using pvl (polyomavirus load) and ci (chronic interstitial inflammation) scores

4. Drug used in the treatment of Strongyloidosis ANSWER- IVERMECTIN Hyperinfection syndrome is associated with high morbidity and mortality. If left untreated, mortality rate approaches 100% which is partly related to delay in the diagnosis and initiation of treatment, as well as due to the accompanying Gram-negative sepsis. Ivermectin, albendazole, and mebendazole have all shown to be effective against *Strongyloides*, but ivermectin is still considered to be the drug of choice

7. Opportunistic infection caused by gram positive and weakly acid-fast positive, aerobic actinomycete ANSWER- NOCARDIOSIS Kidney transplant recipients have potential risk for severe & disseminated Nocardia infection. It should be suspected in immunocompromised patients with fever and lung mass or brain abscess, as atypical presentations are more common and can involve any organ.

10. Multicentric trial on severe diarrhoea ANSWER- DIDACT study recruited 108 patients with severe diarrhea (>/=3 stools/day for >/=7 days) were enrolled from 16 Belgian transplant centers. Patients were diagnosed according to an agreed flowchart that consisted of identification of possible infections, followed by changes in empirical and immuno suppressive treatment.

11. Silver stain used for detection of Spirochaetes ANSWER- STEINER. The usual stain for detecting Spirochaetes in tissue sections is the silver stain, but often difficult to detect due to marked background staining. The Steiner stain and its modifications are also used for detection of Legionella, H. pylori and fungi.

12. Presence of this agent in plasmalyte can cause false positive galactomannan ANSWER-GLUCONATE Case reports have hypothesized that GM was generated from Aspergillus niger during the industrial fermentation process of sodium gluconate in Plasma-Lyte solution, resulting in false-positive reactions.False positive can also occur due to use of piperacillin tazobactum, co-amoxyclav, cefepime, inhaled colistin, IVIG and many other factors.

DOWN

2. Organism which typically causes hemorrhagic cystitis in KTR ANSWER- ADENOVIRUS is a dsDNA virus that can cause hemorrhagic cystitis, granulomatous interstitial nephritis and may be associated with graft dysfunction. The disease may have non renal manifestations like orchitis, enteritis or rhinorrhea, sore throat, cough and shortness of breath (pneumonitis). Patients who don't respond to decrease in immunosuppression may be treated with cidofovir.

3. This antigen is responsible for maintaining extrachromosomal episome in EBV infected cells ANSWER- EBNA1 (EBNA-1) binds in a site-specific manner to the viral DNA and is essential for viral replication, as well as for maintaining the genome as an extrachromosomal episome within infected cells. EBNA-1 is not recognized by the cellular immune system.In addition to its known DNA binding properties, EBNA-1 can also act as a strong RNA binding protein. For Belatacept eligibility, the VCA IgG antibody should be positive and EBNA IgG may or may not be positive.

5. Causes acute and chronic diarrhoea in kidney transplant recipient (KTR) ANSWER - NOROVIRUS is notorious to cause acute and chronic diarrhoea in Kidney transplant

recipients. Nitazoxanide, IVIG, ribavarin and vaccine against NoV have been tried as therapeutic approaches

6. Used for resistant and refractory CMV disease ANSWER- MARIBAVIR has multimodal anti-CMV activity through inhibition of UL 97 protein kinase. In the SOLSTICE trial, it was superior to investigator assigned therapy (valganciclovir /ganciclovir, foscarnet, or cidofovir) for CMV viremia clearance, and viremia clearance plus symptom control, with maintenance of these effects post - therapy in transplant recipients with refractory CMV infections with or without resistance.

8. Patients treated with voriconazole may have nephrotoxicity due to this ANSWER-SBECD (sulphobutylether-β-cyclodextrin) which is a solubilizing agent for intravenous voriconazole may accumulate in patients with impaired renal function and has been associated with renal tubule vacuolation and obstruction in rat models

9. Aspergillus shows this sign on CT scan of chest ANSWER- CRESCENT (air crescent) In angioinvasive aspergillosis, an air crescent is seen as a crescentic area filled with air surrounding the devitalised tissue of the hemorrhagic infarcted lung (due to angioinvasion).The sign was first described on plain radiographs but is classically described in CT scans in this era.

Page 1 Image Credits

The banner on antimicrobial use has been taken from the World Health Organization's Go Blue Campaign (for Antimicrobial Awareness Week 2022) Material

The cartoon by Dr. Anand Chellappan vividly portrays a stark reality: a dry antibiotic pipeline. It serves as a powerful reminder of the critical importance of judicious antimicrobial use. Major advancements in antimicrobial therapy remain elusive. The threat of growing antimicrobial resistance looms larger. It is imperative to avoid inappropriate antimicrobial usage, as it exacerbates resistance, jeopardizing our ability to combat infections effectively

(The views and opinions expressed in the cartoon are imaginary, and that of the cartoonist and not that of his/her employer.)

“Happy New Year to our Fantastic Readers”

We Hope you enjoyed diving into our latest edition as much as we enjoyed crafting it for you.

EDITORIAL TEAM | KIDNEY KOLUMNS

Top to Bottom : Pallavi, Subashri, Vineet, Sabarinath, Sandip, Ambily, Sandhya, Urvashi, Anand, Namrata, Shyam, Mayuri, Sanjeev

La Renon

Renolog

Alpha Ketoanalogue Tablets

Renolog-DS

Alpha Ketoanalogue (Double Strength) Tablets

Logs The
Renal Impairment