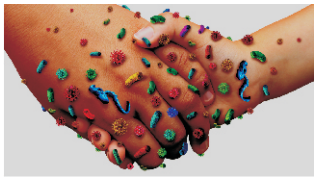
Hospital Infection Control NEWSLETTER

Healthcare without infection

Year: 04: 2022 Volume: 04 **Edition: Jan- June 2022**

In this edition

From the Desk of Chairman



The SARSCOV-2 pandemic has highlighted serious deficiencies in infection prevention and control (IPC) practices such as hand hygiene & use of personal protective equipment. In addition, Monkey pox an 'old' foe posed 'new' challenges in 2022. In the era of pandemics, nursing staff play a critical role in infection prevention and control in health-care settings. They spend a significant amount of time in activities that have the potential to reduce infections.

In this editorial, therefore we would like to focus on diversity, equity and inclusion (DEI) of nursing staff at our tertiary care centre. Despite being the eyes and ears of the doctor, this workforce is often undervalued, underutilized and excluded from important patient-care decisions. 'Diversity' means representation of all cadres of nursing staff in patient care where their presence is critical. 'Equity' is a commitment to actively work and respond to patient-care impartially. 'Inclusion' is invitation of nurses to meetings so that they can be held accountable for IPC efforts.

With these considerations, we are publishing the June edition of the HIC newsletter. The highlights of this issue are the innovative and vibrant posters with 'rangolis' that our very own nursing students have made on the occasion of World Hand Hygiene Day to improve the IPC practices at our institute.

Hope you enjoy the content!

Prof. Gaurav Agarwal
Chairman, SHICCOM &
Chief Medical Superintendent, SGPGIMS

Spotlight : *Key observations*

NEONATOLOGY

Antibiogram of bacterial pathogens recovered in blood cultures of IPD patients (January-June 2022)

Contributed by: HIC Cell, SHICCOM & Department of Neonatology

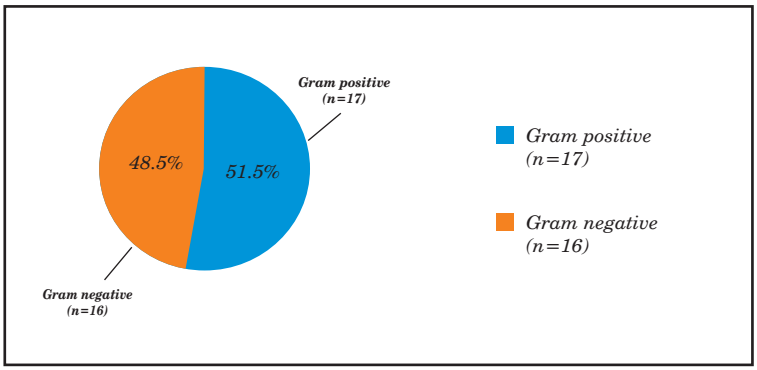


Fig 1. Distribution of isolates from positive blood cultures (N = 33)

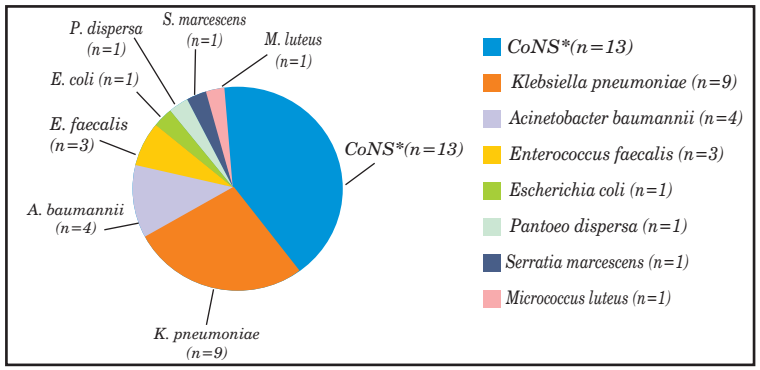


Fig 2. Species specific distribution of bacterial pathogens isolated from positive blood cultures

* *Coagulase negative Staphylococci*

Percentage sensitivity

Table 1. Antibiogram (% susceptible) Gram positive isolates (n = 16)

	Number of isolates	Cefoxitin	Ampicillin	Ampicillin-sulbactam	Erythromycin	Clindamycin	Levofloxacin	Gentamicin	Doxycycline	Minocycline	Levonadifloxacin	Vancomycin	Teicoplanin	Linezolid
CoNS	13	8	0	8	15	23	15	-	92	-	61	100	100	-
E.faecalis	3	-	100	100	-	-	0	66	100	66	-	100	100	66

Table 2. Antibiogram (% susceptible) Gram negative isolates (n = 14)

	Number of isolates	Ceftazidime	Ceftriaxone	Ciprofloxacin	Amikacin	Gentamicin	Cefoperazone-sulbactam	Imipenem	Meropenem	Ertapenem	Doxycycline	Cotrimoxazole	Colistin
K. pneumoniae	9	0	0	22	11	-	11	22	11	11	22	0	89
A. baumannii	4	50	0	0	0	-	50	0	0	0	-	-	50
E. coli	1	0	0	0	100	-	0	0	0	0	-	-	100

A 'dash (-)' implies that sensitivity to an antibiotic has not been tested for that organism

Note: 1. % suceptible has been represented in the antibiogram. 2. Results are for drugs routinely tested. 3. All isolates are diagnostic, not for surveillance. 4. An antibiogram should include species with at least 30 isolates tested. 5. Only first isolate from any sample has been included.

Contact : hiccdohasgpgims@gmail.com

Spotlight: *Key interventions*

Contributed by: Dr. Aarushi Omar, Dr. Richa Mishra, Dr. R. Harsvardhan, Dr. Ved Prakash Maurya

Impact of an antimicrobial stewardship intervention at the neurosurgery ICU of SGPGIMS: evaluation of post-prescription review & feedback

We conducted a prospective observational, single-center cohort study to assess the impact of an antimicrobial stewardship intervention at a 15-bed, adult mixed medical-surgical ICU at SGPGIMS.

Methods

- All patients above 15 yrs of age, who were on antibiotics for > 48 hrs were included in the study. The Hospital Infection Control (HIC) team documented the information of all patients, daily on a standardized antibiotic tracking sheet.
- The primary outcome measure was days of therapy (DOT) per 1,000 in-patient days.
- The study was conducted in 3 phases- a baseline data collection without any recommendations (n=152), an intervention phase & a follow-up phase (n=166).

Results

- The overall decrease in the DOT per 1,000 in-patient days from pre-intervention to post-intervention phase was **17.8% (Fig. 1)**
- The decrease in the average duration of antibiotic use before & after intervention is represented in **Table 1**
- **Fig. 2** is showing the decrease in DOT for the most common antibiotics after intervention

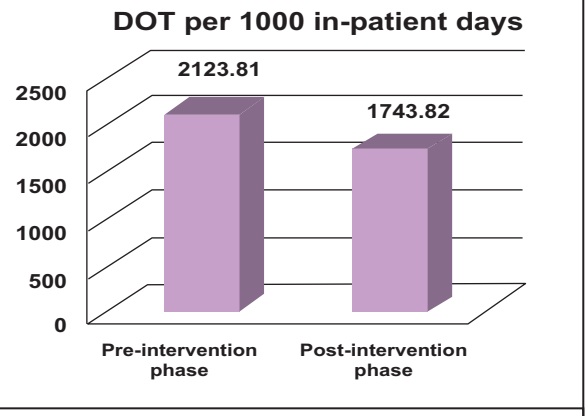


Fig. 1: DOT per 1000 in-patient days during pre & post-intervention phase without any recommendations

Table 1: The average duration of antibiotic use in days during the pre- & post-intervention phase

Sl. No.	Antibiotics	Pre-intervention phase	Post-intervention phase
1.	Amikacin	8.2	6.4
2.	Metrogy1	7.6	7.6
3.	Ceftazidime	7.7	6.6
4.	Meropenem	12.9	9.8
5.	Colistin	14.3	9.7
6.	Levofloxacin	9.7	6.8
7.	Clarithromycin	5.7	0

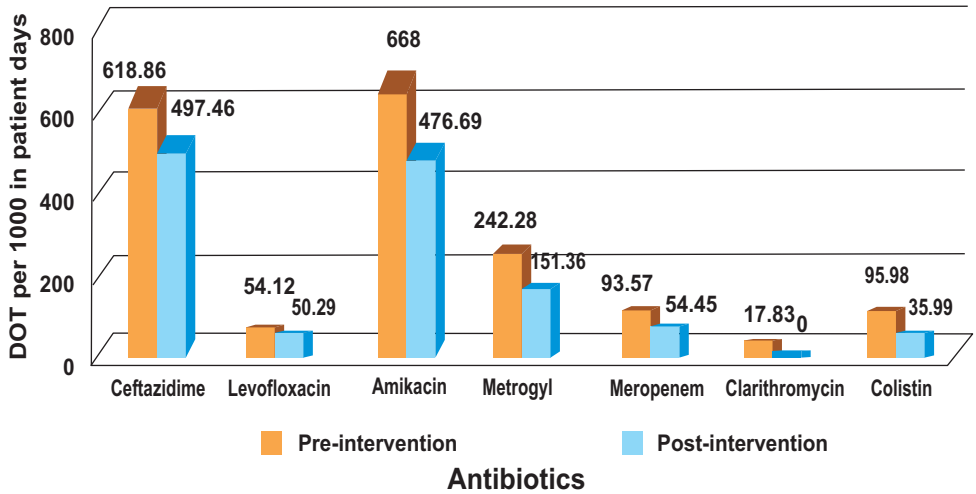


Fig. 2: Comparision of DOT / 1000 in-patient days of most commonly prescribed antibiotics during pre-intervention & follow-up phase

Conclusions

- Our study demonstrated the successful implementation of a pilot initiative for AMSP at an adult ICU in our center
- Inter-disciplinary collaboration including an active HIC team along with educational interventions were the essential components of our initiative
- Implementation of the AMSP was associated with redaction in antibiotic use and pharmacy costs.

References:

1. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis; Murray, Christopher JL et al. The Lancet, Volume 399, Issue 10325, 629 – 655 https://doi.org/10.1016/S0140-6736(21)02724-0
2. Antimicrobial Stewardship Programmes in Health-care Facilities in Low- and Middle-Income Countries, A Who Practical Toolkit

Interesting case: *Anterior mediastinal mass*

Contributed by: Dr. Richa Mishra, Dr. Ashima Jamwal, Dr. Bishal Gupta, Dr. Abhijit Bharali, Dr. Sudeep Kumar, Dr. Alok Nath

A rare presentation of tuberculosis in an immunocompetent male

A 15 year old boy in class 10 presented to the Cardiology out-patient department of our institution with sudden onset of breathlessness for 7 days and gradual weight loss of 8 kg over last 1 month. He had a past history of hyperthyroidism due to Graves' disease diagnosed in 2020. Presently, he was not on any medication and he did not have any significant medical family history. There was a normal sinus rhythm on ECG but echocardiography revealed gross pericardial effusion with impending tamponade. Chest radiography revealed a large mediastinal mass with widening on the left side (Fig 1a). He was immediately

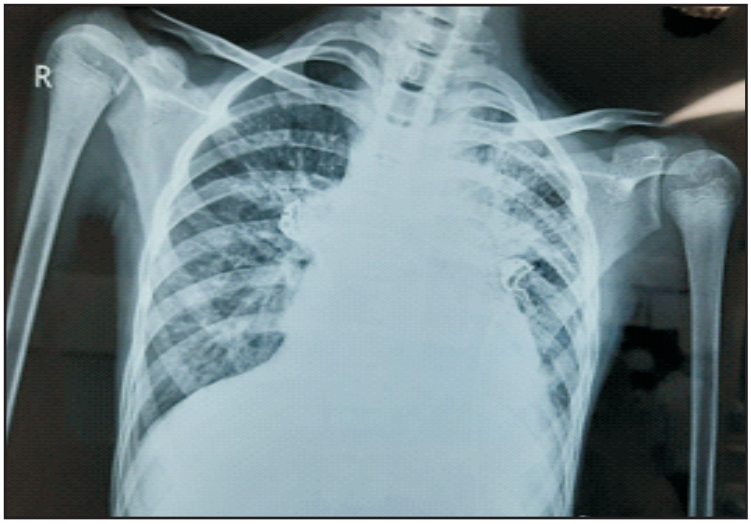


Fig 1a: Chest x ray showing large mediastinal mass with mediastinal widening

admitted to the MICU and initial differentials were considered as a lymphoma or a germ cell tumor. Pericardiocentesis was done on three consecutive days to remove about 500 ml of fluid (Fig1b).

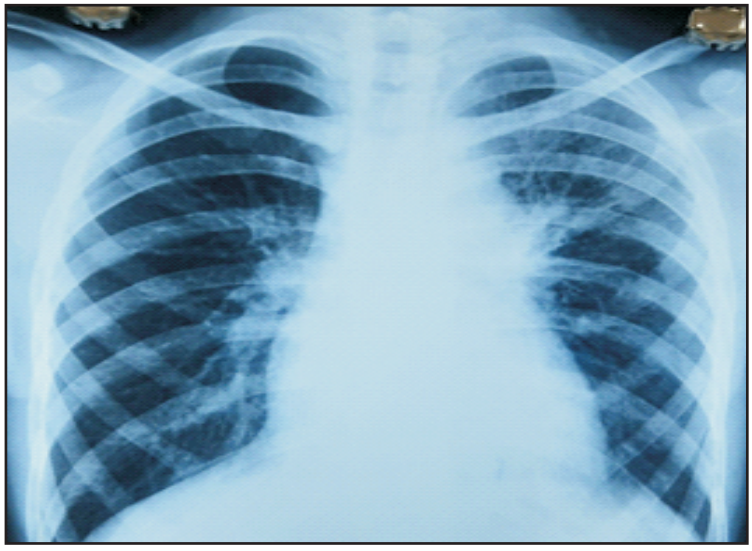


Fig 1b: Chest x ray after pericardiocentesis

An analysis of the fluid revealed a total cell count of 400 cells/μl with predominance (70%) of lymphocytes without any malignant cells. Adenosine deaminase (ADA) test performed on pericardial fluid showed a value of 84.5 U/L. Smear microscopy by Gram's stain or acid-fast stain did not reveal any organisms. *Mycobacterium tuberculosis* complex was not detected by the GeneXpert MTB/RIF assay. A CT scan was

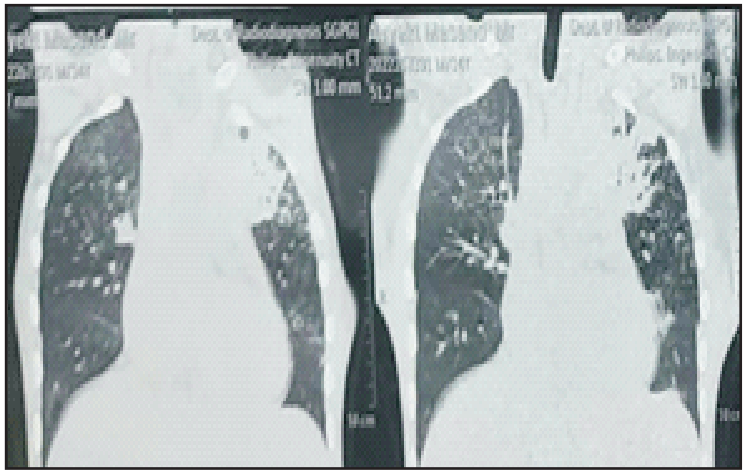


Fig 2 CT scan of chest showing patchy area of consolidation on left upper lobe(yellow arrow) with multiple centrilobular nodule in both lungs as tree in budding appearance(red arrow)

planned for further characterization of the mass (Fig 2). Fine needle aspiration cytology (FNAC) was done from the mass and a histological examination showed suppurative necrosis with granulomatous inflammation suggestive of tuberculosis. Culture from the aspirate was positive for *Mycobacterium tuberculosis* complex. The patient was initiated on standard anti-tubercular therapy and is doing well till now after completion of 3 months of treatment.

India has the highest TB burden in the world and is home to 26% of the world's estimated 10.4 million annual TB cases. Tuberculosis can mimic malignancy both radiologically and clinically, hence diagnostic confirmation by histology or a molecular test with culture is imperative prior to therapeutic intervention.

Our case highlights the importance of considering tuberculosis in the differential diagnosis of an immunocompetent patient presenting as an isolated mediastinal mass that cannot otherwise be explained. A high index of suspicion with thorough radiological investigation supplemented with a tissue diagnosis is important when assessing an undifferentiated mediastinal mass in individuals from regions endemic to TB.

In focus: *Tuberculosis*

Contributed by: Dr. Richa Mishra, Dr. Alok Nath, Dr. Prerna Kapoor

Covid-19's devastating effect on tuberculosis care— a path to recovery

Source: N Engl J Med 2022; 386:1490-1493. doi: 10.1056/NEJMp2118145

The Covid-19 pandemic has had devastating effects on every aspect of global health, but tuberculosis services have been disproportionately affected. According to the World Health Organization (WHO) Global Tuberculosis Report 2022, case notifications have plummeted because of pandemic-related disruptions in services.[2] For the first time in more than a decade, tuberculosis mortality has increased. India also had a major Covid-19 outbreak with health care service disruptions. Tuberculosis deaths have increased because of reduced access to care as a result of Covid pandemic- related effects.

- In 2020, there were roughly 1.5 million tuberculosis deaths worldwide, representing the first year-over-year increase in tuberculosis deaths since 2005. (Fig.1- A & B)
- A 15% reduction in the number of people treated for drug-resistant tuberculosis

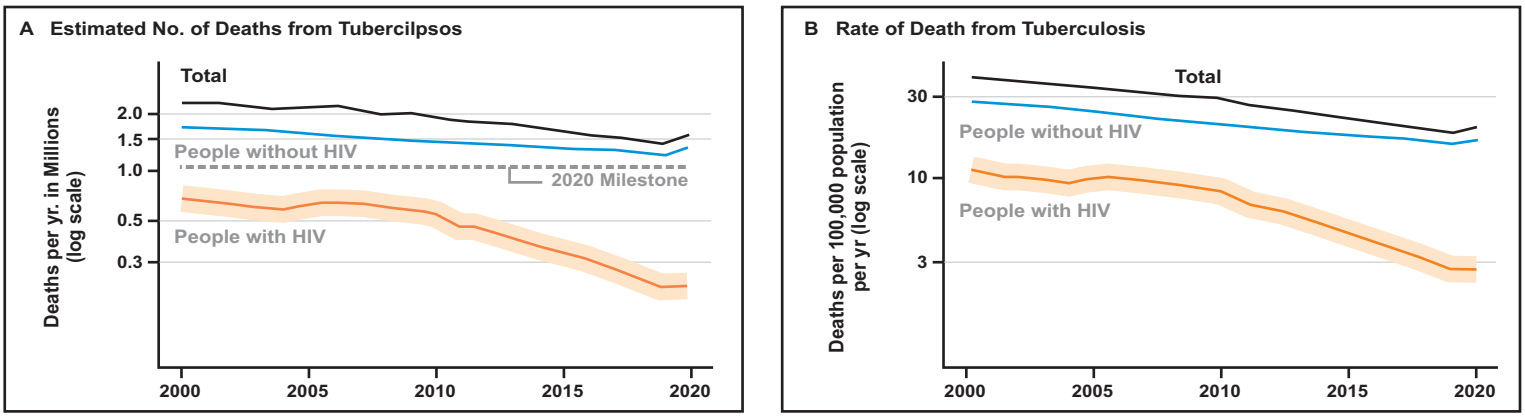


Fig. 1: The horizontal dashed line in panel A shows the 2020 milestone of the End TB Strategy

- A 21% decrease in people receiving preventive treatment for tuberculosis infection, and
- A decrease (from $5.8 billion to $5.3 billion) in global tuberculosis spending between 2019 and 2020.

Because so many tuberculosis cases have been missed during the past 2 years, increased transmission is expected. These projections don't account for exacerbations in the social determinants (such as extreme poverty and malnutrition) that fuel the tuberculosis epidemic. In 2020, the Covid-19 pandemic pushed 100 million people into poverty and nearly 20% of global tuberculosis incidence is attributable to undernutrition.

The path to recovery will require both immediate, short-term steps and longer-term actions. First, ending the Covid-19 pandemic quickly is critical for rebuilding tuberculosis services. No country can keep new variant in check without high Covid- 19 vaccine coverage. Second, investments in digital data systems, connected diagnostics, and digital treatment-support tools could make tuberculosis data more visible and accessible. Third, improving case detection is an urgent priority.

Every country has scaled up its molecular-testing capacity for Covid-19, and this capacity could be used for tuberculosis testing. Substantial advances have been made in digital health, remote service provision, ultraportable digital x-ray systems with artificial-intelligence–based reading software and use of e-pharmacies in combination with home delivery of medicines. In the longer term, only by establishing multisectoral collaborations involving personal, societal, and health system interventions will we end the global tuberculosis epidemic by 2035. Development of a simple, point-of-care tuberculosis test, an improved tuberculosis vaccine, and ultra-short drug regimens is critical.

Even as more than $100 billion has been invested in developing Covid-19 vaccines, the century-old bacilli Calmette–Guerin vaccine is still used for tuberculosis. Investments in new tuberculosis vaccines amount to barely $0.1 billion per year. New platforms such as mRNA and viral vectors that have proven successful for Covid-19 vaccines could be leveraged to develop tuberculosis vaccines, and clinical trials must be accelerated to end the global tuberculases epidemic by 2035.

References:

1. World Health Organization. Global tuberculosis report 2021. October 14, 2021 (https://www.who.int/publications/i/item/9789240037021)
2. Sinha P, Lonnroth K, Bhargava A, et al. Food for thought: addressing undernutrition to end tuberculosis. Lancet Infect Dis 2021; 21(10): e318-e325

Visual Challenge: *What is your Diagnosis?*

Contributed by: Dr. Bishal Gupta, Dr. R.S.K.Marak

A 54 years old male presented to the Dermatology OPD at SGPGI with chief complaints of dry red patch on the abdomen, around the umblicus for past one year. The lesion was associated with severe itching. Physical examination revealed a large scaly lesion present on his abdomen. He did not have diabetes or any other co-morbid condition.

Fig 1: Dry reddish scaly lesion on the abdomen around umbilicus

Infectious disease update

Lenacapavir for HIV-1: Potential promise of a long- acting antiretroviral drug.

Source: N Engl J Med. 2022;386(19):1848-1849. doi: 10.1056/NEJMe2204376

Treatment options are extremely limited for people living with HIV, whose virus is no longer effectively controlled by their current regimen. Lenacapavir, a first-in-class capsid inhibitor, is Gilead's new treatment option for patients with multi-drug resistant HIV.

In a double-blinded, placebo-controlled global multicenter study, the CAPELLA trial (Phase 2/3), lenacapavir was administered every six months as a subcutaneous add-on injection, to a failing regimen (functional monotherapy) in heavily treatment experienced people living with HIV (PLWH). In this, patient population, 81% (N=29/36) of participants receiving lenacapavir in addition to an Optimized Background Regimen (OBR) achieved an undetectable viral load (<50 copies/ml) at week 26. Additionally, CAPELLA participants achieved a mean increase in CD 4 count of 81 cells / μl. No serious adverse events were recorded.

Medicolegal Corner : *Medical termination of pregnancy (amendment) bill, 2022*

Contributed by: Dr. R. Harsvardhan, Dr. Vinay Kumar Pathak

The Rajya Sabha has approved the Medical Termination of Pregnancy (Amendment) Bill, 2021 to amend the Medical Termination of Pregnancy Act, 1971 on 16th March 2021. The Bill was approved in Lok Sabha on 17th March 2020.

Salient features of amendments:

- Enhancing the upper gestation limit from 20 to 24 weeks for special categories of women which will be defined in the amendments to the MTP Rules and would include survivors of rape, victims of incest and other vulnerable women (like differently-abled women, minors) etc.
- Opinion of only one provider will be required up to 20 weeks of gestation and of two providers for termination of pregnancy of 20-24 weeks of gestation.
- Upper gestation limit not to apply in cases of substantial foetal abnormalities diagnosed by Medical Board. The composition, functions and other details of Medical Board to be prescribed subsequently in Rules under the Act.
- Name and other particulars of a woman whose pregnancy has been terminated shall not be revealed except to a person authorised in any law for the time being in force.
- The ground of failure of contraceptive has been extended to women and her partner.

The Medical Termination of Pregnancy (Amendment) Bill, 2021 is for expanding access of women to safe and legal abortion services on therapeutic, eugenic, humanitarian or social grounds. The amendments include substitution of certain sub-sections, insertion of certain new clauses under some sections in the existing Medical Termination of Pregnancy Act, 1971, with a view to increase upper gestation limit for termination of pregnancy under certain conditions and to strengthen access to comprehensive abortion care, under strict conditions, without compromising service and quality of safe abortion.

It is a step towards safety and well-being of the women and many women will be benefitted by this. Recently several petitions were received by the Courts seeking permission for aborting pregnancies at a gestational age beyond the present permissible limit on grounds of foetal abnormalities or pregnancies due to sexual violence faced by women. The amendments will increase the ambit and access of women to safe abortion services and will ensure dignity, autonomy, confidentiality and justice for women who need to terminate pregnancy.

Source:

https://pib.gov.in/PressReleasePage.aspx?PRID=1705381#:~:text=The%20Medical%20Termination%20of%20Pregnancy%20(Amendment)%20Bill%2C%202021%20is,eugenic%2C%20humanitarian%20or%20social%20grounds.

Editor's choice: *Citations to ponder*

1. Thornhill JP, S. Barkati, S. Walmsley.,et al, Monkeypox Virus Infection in Humans across 16 Countries - N Engl J Med. 2022;387(8):679-691. doi: 10.1056/NEJMoa2207323

The authors formed an international collaborative group of clinicians who contributed to an international case series to describe the presentation, clinical course and outcomes of polymerase-chain-reaction confirmed monkeypox virus infections. They reported 528 infections during the study period at 43 sites in 16 countries. The median age of patients was 38 years and 95% were gay or bisexual men. The route of transmission was suspected to be sexual in 95% cases. Rash & anogenital lesions were the most common presenting features preceded by fever (62%), lethargy (41%), myalgia (31%) and headache (27%). Lymphadenopathy was also common (56%). No deaths were reported. The simultaneous identification of cases outside areas where monkeypox has traditionally been endemic highlights the need for rapid identification and diagnosis of cases to contain further community spread.

2. **Aliasgar Esmail, Suzette Oelofse , Carl Lombard., et al., An All-Oral 6-Month Regimen for Multidrug-Resistant Tuberculosis: National library of medicine; 205(10):1214-1227. doi: 10.1164/rccm.202107-1779OC**

Shortening the duration of treatment of multidrug-resistant/ rifampicin-resistant tuberculosis (MDR/ RR-TB) to ~6 months and reducing toxicity are the basis of strategies to develop new regimens for DR-TB. The objective of this study was to conduct a multicentre randomized controlled trial in adults with MDR/ RR-TB, without resistance to fluoroquinolones or aminoglycosides. Participants were randomly assigned in a 1:1 ratio to a 6-month all-oral regimen that included levofloxacin, bedaquiline and linezolid or the SOC (standard-of-care), >=9 months WHO-approved injection-based regimen. The trial concluded that compared with the traditional injectable-containing regimens, an all-oral 6-month levofloxacin, bedaquiline and linezolid-containing MDR/RR-TB regimen was associated with a significantly improved 24-month WHO-defined treatment outcome.

3. Eckburg PB, Muir L, Critchley IA, et al. Oral Tebipenem Pivoxil Hydrobromide in Complicated Urinary Tract Infection. N Engl J Med**. 2022;386(14):1327-1338. doi:10.1056/NEJMoa2105462**

There is a need for oral antibiotic agents that are effective against multidrug-resistant gram-negative uropathogens. Tebipenem pivoxil hydrobromide is an orally bioavailable carbapenem with activity against uropathogenic Enterobacterales, including extended-spectrum beta-lactamase–producing and fluoroquinolone-resistant strains. In this phase 3, international, double-blind, double-dummy trial, (ADAPT-PO), the authors evaluated the efficacy and safety of orally administered tebipenem pivoxil hydrobromide, 600 mg every 8 h, as compared with intravenous ertapenem, 1 g every 24 h, in patients with complicated urinary tract infection or acute pyelonephritis. A total of 1372 hospitalized adult patients were enrolled. An overall response at test of cure was seen in 264 of 449 patients (58.8%) who received tebipenem pivoxil hydrobromide, as compared with 258 of 419 patients (61.6%) who received ertapenem. The most common adverse events were mild diarrhea and headache. Oral tebipenem pivoxil hydrobromide was noninferior to intravenous ertapenem in the treatment of complicated urinary tract infection and acute pyelonephritis and had a similar safety profile.

The gut microbiome & it's effect on human health

Contributed by: Dr. R. Harsvardhan, Dr. Amit Goel, Dr. Vinay Kumar Pathak

The greatest number and bacteria live in the largest portion of our colon, the lower part of our digestive system — there are possibly trillions of microorganisms in our gut at any given time. For a while, it was thought these microorganisms were just passengers. But intricate research has since shown that animals born without a microbiome in what we term 'germ-free conditions' suffer from very altered biology. So, the microbes living within us are not present there by happenstance — they are actually critical to shaping our immune system and biology.

Interestingly, the human gut microbiome is unique in every being — it's like our fingerprint. At birth, the mother is believed to be the source of microbial inoculum, and hence, the mother's health is considered to have critical impact in reinforcing the child's immune system. The gut microbial diversity gradually imbibe compositional changes until it stabilizes at the end of the first year of life after birth. For the rest of the life, this dynamic and complex microbial community is constantly under selective pressures (internal pressures like inter and intraorganism competition and external pressures like diet and antibiotics) that aid in evolution of the gut microbiome. Even identical twins have different microbiomes.

Our choices can powerfully affect this extraordinary entity. Food is critical since what we eat is what our microbiome gets exposed to. Currently, evidence shows that countries where people used to traditionally eat more vegetables and wholegrains and are now turning to processed foods have higher rates of obesity-related disorders and metabolic diseases like diabetes. Many research is on understanding how the microbiome impacts people with cancers. It has been observed that individuals who undergo transplants, respond to therapies like immunotherapy while others do not, and whether the gut microbiome predisposes people to improved cancer related outcomes. In patients who undergo blood, marrow and cell transplantation, a subset develops infection. The gut microbiome can also impact vaccine responsiveness. Vaccines are essential to protect people from Covid-19, polio, hepatitis, etc. Since people's microbiomes are significantly impacted by their environment, lifestyles and diets, studies exploring the role of our microbiome in vaccine responsiveness could help us give a particular kind of person not just a vaccine but perhaps also a pill with various fibers to encourage the growth of certain bacteria, leading to better vaccine responsiveness.

Our gut microbiome is critical for health. To protect this, we must eat a diverse array of fresh foods as our bacteria are extremely dependent on the different fibers in our diet. Also, avoiding unnecessary antibiotics is important as they actually harm our microbiome for the future.

World Hand Hygiene Day : 5th May, 2022

Contributed by: SHICCOM, HIC Cell & All Residents of DOHA

The WHO guidelines on hand hygiene in healthcare suggest that hand hygiene is the single most important measure for prevention of Healthcare Associated Infections (HCAI). Keeping in mind the same, SGPIMS Hospital Infection Control Committee (SHICCOM) organized an awareness program on 5th May, 2022 at H.G. Khurana Auditorium to celebrate, World Hand Hygiene Day. On this occasion the binannual newsletter of **SGPIMS Hospital Infection Control Committee (SHICCOM)** was also released.

The inaugural of the scientific session commenced with a welcome

note & opening remarks by **Dr. R. Harsvardhan,** Member Secretary, SHICCOM & HoD, Hospital Administration followed by a deliberation by **Dr. Gaurav Agarwal,** Chairman, SHICCOM & CMS, SGPGIMS on how hand hygiene saves lives. **Dr. R. K. Dhiman,** Director, SGPGIMS emhasized on the importance of hand hygiene at Point of Care, stressing on the importance of adhering to the Five Moments of hand hygiene in daily clinical practice. The scientific session commenced with a talk by **Dr. Amit Goel,** Addl. Prof., Deptt. of Gastroenterology on 'Prevention & Management of Needle Stick Injury'. 'Operating Room Protocols' were explained by **Sis. Ancy Jayaraj,** In - Charge., OT Complex, ATC, **Dr. Richa Mishra,** Addl. Prof., Deptt. of Microbiology deliberated on the topic 'Blood culture collection: Best Practices, Best Outcome'. A live demonstration of correct technique of donning & doffing of PPE was demonstrated by Mr. Dhikhil C. D., Quality Nurse Coordinator**,** Deptt. of Hospital Administration. The event concluded with a vote of thanks by **Dr. Richa Mishra,** Additional Prof., Deptt. of Microbiology.

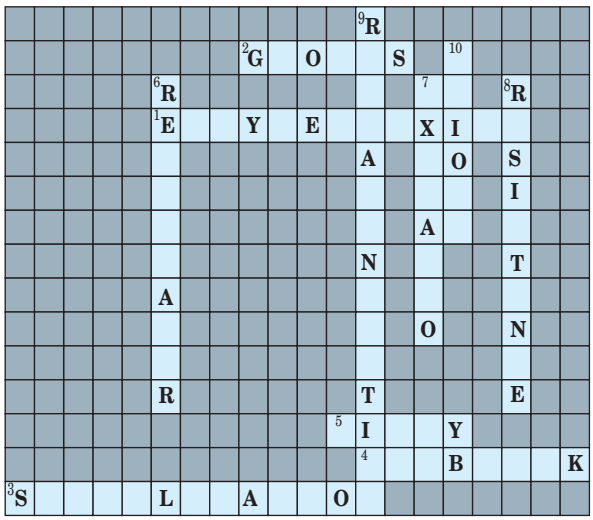
The rangoli and poster session were judged by external jury of **Dr. Praveena Dhiman,** Jt. Director, Department of Medical Health and Family Welfare, U.P. and **Dr. Jyotsna Agarwal**, HoD, Microbiology, RMLIMS.

Over 150 delegates attended this awareness program and the main highlight of the event were the vibrant rangolis and posters that our own nursing students had made.

Fig 1: 3rd Prize, Poster Competition (Ms. Soniya)

Fig 2: 3rd Prize, Rangoli Competition (Ms. Mahak & Ms. Akshita)

Brain teaser



Across:

1. A gas which is appropriate to use for sterilization of instruments/equipment made from heat labile materials or those devices that contain electronic components.
2. The use of _____ should never replace the need for hand hygiene by either handrubbing or handwashing.
3. An absolute term meaning the absence of all viable organisms
4. Occurrence of cases of disease in excess of what would normally be expected in a defined community, geographical area or season
5. Old traumatic wound with remaining devitalized tissue is called as _____

Down:

6. A component of PPE worn when dealing with patients infected with highly transmissible respiratory pathogens while following droplet precautions
7. It is the process by which dry heat sterilization is caused by hot air that destroys pathogens
8. Taking antibiotics when you don't need them helps bacteria develop_____
9. A 14-day timeframe during which no new infections of the same type are reported.
10. Organism most resistant to disinfectants

Answer to the Visual challenge

Trichophyton interdigitale identified on MALDI-TOF MS.

Answer to Crossword

ACROSS-

1. Ethylene oxide, 2. Gloves, 3. Sterilization, 4. Outbreak, 5. Dirty

DOWN-

6. Respirator, 7. Oxidation, 8. Resistance, 9. Repeat infection, 10. Prions

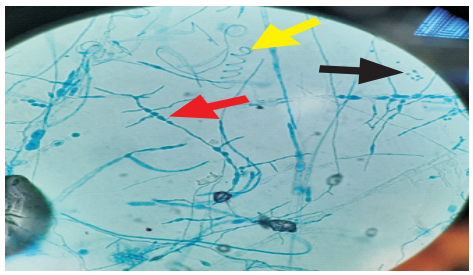


Fig 2 : Lactophenol cotton blue preparation from the culture showing spiral hyphae(yellow arrow), nodular body (red arrow) and abundant microconidia (black arrow).

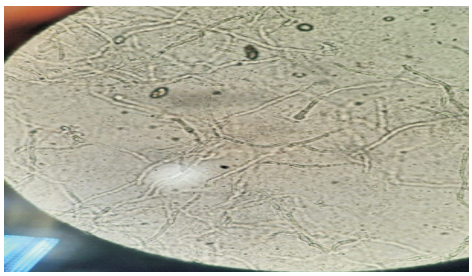


Fig 1 : Thin hyaline septate fungal hyphae in 10% KOH wet mount from scrapings of lesion

Fig 2: 2nd Prize, Poster Competition (Ms. Suvi Chauhan)

Fig 5: 2nd Prize, Rangoli Competition (Ms. Madhu & Ms. Mansi)

Fig 4: 1st Prize, Rangoli Competition (Ms. Priyanshi & Ms. Swati)

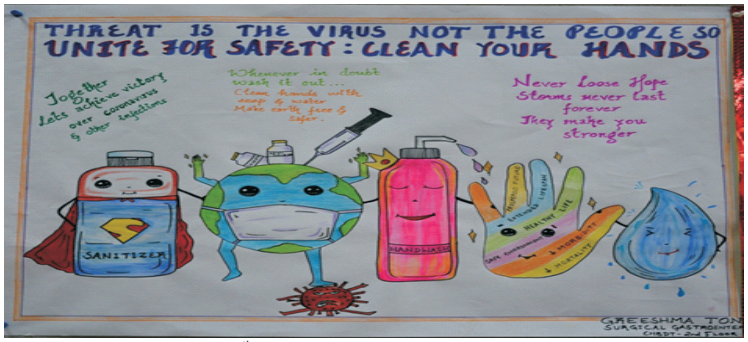


Fig 1: 1st Prize, Poster Competition (Greeshma Tony)

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