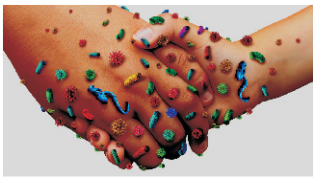
Hospital Infection Control NEWSLETTER

Healthcare without infection

Year: 03 : 2021 Volume: 03 Edition: Jul – Dec 2021

In this edition

From the Desk of Chairman



Dear HIC Stewards,

We are aware that both the healthcare provider and patient, actually a human microbiome, are a potential threat to the sterility & aseptic environment in hospitals. This emphasises on the unequivocal need for a perpetually active Hospital Infection Control Committee (HICC). Breach in HIC protocols, in community settings, has added to the 3rd surge of COVID pandemic, substantiating deficiencies in HIC practices, world over. Further, MDROs continue to elude clinicians, clinical microbiologists & pharmacologists, alike and to administrators, as well, from the perspective of health economics. Local antibiogram with pathogen specific susceptibility data, on common bacterial pathogens, tend to help clinicians to optimize empirical therapy; there by preventing the emergence of resistant bugs. We have included some interesting cases & citations, too, in this Newsletter & I believe, it will add to the clinical insight, in one way or the other !

With Warm New Year Greetings !!

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

Spotlight : *Key observations*

UROLOGY

Antibiogram of first 5 common bacterial pathogens in both IPD & OPD samples (June – November 2021)

Contributed by : HIC Cell, SHICCOM and Department of Urology

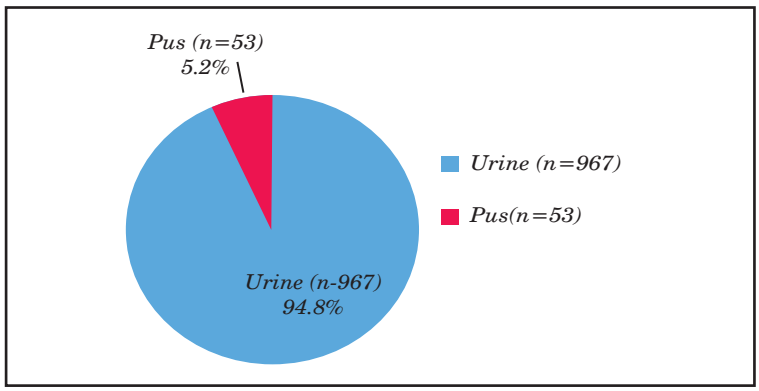


Fig 1. Distribution of total positive cultures in urine and pus samples (including PCN) (N = 1020; OPD = 739, IPD = 281)

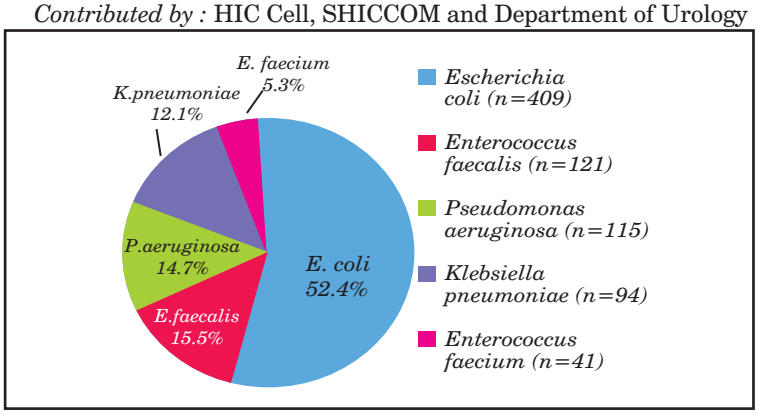


Fig 2. Species specific distribution of first 5 bacterial isolates obtained from positive cultures in pus and urine samples (including PCN), (N = 780)

Percentage sensitivity

Table 1. Antibiogram (% susceptible) Gram positive isolates (n = 162)

	Number of isolates	Ampicillin	Vancomycin	Teicoplanin	Norfloxacin	Doxycycline	High level gentamicin*	Nitrofurantion*
E. faecalis	121	93	96	98	9	30	36	99
E. faecium	41	36	88	86	5	47	50	57

Table 2. Antibiogram (% susceptible) Gram negative isolates (n = 618)

	Number of isolates	Ceftazidime	Ceftriaxone	Norfloxacin	Levofloxacin	Amikacin	Gentamicin	Piperacillin-tazobactam	Cefoperazone-sulbactam	Imipenem	Meropenem	Ertapenem	Cotrimoxazole	Nitrofurantoin	Colistin	Fosfomycin	Tigecycline	Aztreonam
E. coli	409	26	19	13	-	69	67	76	64	34	61	76	31	83	94	97	100	-
P. aeruginosa	115	44	-	-	30	30	-	56	39	34	45	-	-	-	96	37	-	41
K. pneumoniae	94	31	29	37	-	0	45	64	18	23	19	60	31	27	88	84	88	-

***Tested only in Urine ; a 'dash (-)' implies that sensitivity to an antibiotic has not been tested for that organism**

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

Spotlight: *Key interventions*

Contributed by : Dr. Pallavi Mehra, Dr. Rajesh Harsvardhan, Dr. Richa Mishra, Dr. Afzal Azim

The rate of ventilator associated events (VAEs) & use of a bundle approach to improve ventilator care processes and ICU course in mechanically ventilated critically ill patients at an adult ICU of SGPGIMS

Invasive mechanical ventilation (IMV) is a widely used and life sustaining intervention for critically ill Intensive Care Unit (ICU) patients.There are few published reports from India on the rate of VAE and compliance of ventilator care bundle in mechanically ventilated critically ill ICU patients. We conducted a prospective, observational, single-center cohort study at a 20-bed, adult mixed medical-surgical ICU at SGPGIMS between January 2018– June 2021.

Objectives

- To obtain the baseline Ventilator Associated Event (VAE) rate and the Device Utilizition Ratio (DUR) among mechanically ventilated critically ill patients
- To calculate the compliance rate of 6 components of the ventilator care bundle in mechanically ventilated critically ill patients
- To assess the impact of ventilator care bundle on the rate of VAE & ICU course in our study cohort

Methods

The Hospital Infection Control Team recorded the information of all mechanically ventilated patients for >4 days, daily in each shift. Ventilator care components were assessed by direct observation & documented from patient intensive care charts. We referred to the VAE data collection worksheet recommended by CDC/NHSN to calculate rate of VAE. A ventilator care bundle checklist was used for data acquisition. Compliance to each ventilator care bundle component was recorded as "All or None".

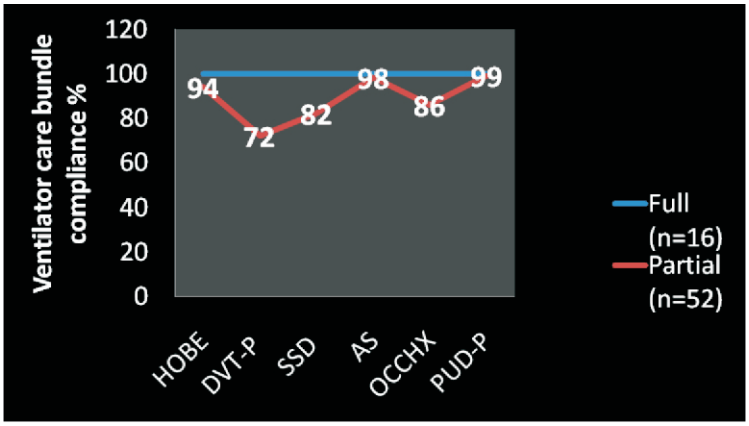


Fig 1. Ventilator care bundle compliance in our study cohort (n=68)*

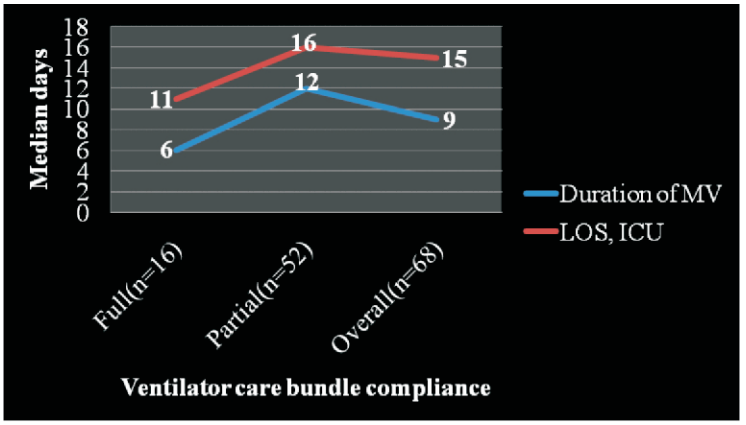


Fig 2. Impact of ventilator care bundle compliance on ICU course of patients (n=68)

Results

- The median time to onset of VAE was 6 days
- VAE occurred in 59 episodes, rate of 11.3 per 1000 ventilator-days
- Ventilator or Device Utilization Ratio was 0.87
- Partial compliance to 6 components of the ventilator care bundle was observed in 52 patients while full compliance to all 6 components, was documented in 16 patients (N=68)

Conclusions

- We have highlighted the high rates of VAEs prevailing in Indian ICUs
- The successful implementation of the bundle approach managed to reduce the;
  - duration of mechanical ventilation from 12 to 6 days
  - length of stay (LOS) in ICU from 16 to 11 days
  - rate of VAE from 11.3 to 9.2 per 1000 ventilator days
- The bundle care strategy is easy to implement and does not need any expensive equipment

References

1. Patnaik R, Mishra R, Azim A, et al. Evaluation of ventilator associated events in critically ill patients with invasive mechanical ventilation: A prospective cohort study at a resource limited setting in Northern India. Journal of Critical Care. 2021 https://doi.org/10.1016/j.jcrc.2021.03.001

2. Institute for Healthcare Improvement. Institute for Healthcare Improvement: Ventilator Bundle Checklist [Internet] 2019. Available from : http://www.ihi.org/resources/Pages/Tools/VentilatorBundleChecklist.aspx

* **HOBE :** Head of Bed Elevation; **DVT-P :** Deep Venous Thrombosis Prophylaxis; **SSD :** Subglottic Suction Drainage; **AS :** Assessment of Sedation; **OCCHX :** Oral Care with Chlorhexidine; **PUD-P :** Peptic Ulcer Disease Prophylaxis

Interesting case: *COVID associated Mucormycosis*

A case of periorbital oedema and headache in a diabetic male during the COVID-19 outbreak

Contributed by: Dr. Amit Keshri, Dr. Nidhi Bhatnagar
Dr. RSK Marak

A 65-year-old male known diabetic and hypertensive, presented to the Emergency OPD in May 2021 with complaints of headache and right periorbital edema for 20 days (Figure 1).

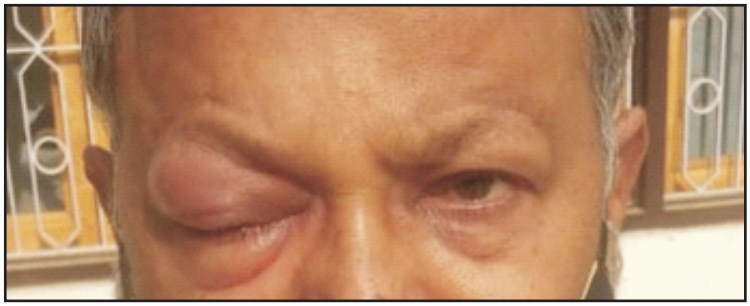


Fig 1: Patient with right periorbital oedema

He was admitted to a private hospital for COVID-19 pneumonia one month back (CT severity score 13/25) and discharged in a stable condition on oral steroids and home isolation. After 1 week of discharge, he complained of persistent frontal headache and gradually progressing right periorbital edema. There was no nausea, vomiting or blurring of vision. His son, a chemist by profession had started him on amoxicillin-clavulanate 625 mg TDS and antibiotic eye drops without any medical consultation.

At SGPGI, he was provisionally diagnosed as a case of orbital cellulitis and referred to the ENT Unit of Department of Neurosurgery. Routine blood investigations showed elevated random blood sugar of 263 mg/dl. All other investigations including total counts, liver function tests, renal parameters and serum electrolytes were within normal limits. Anterior rhinoscopy examination revealed right middle turbinate hypertrophy and nasal endoscopy revealed mucosal congestion without any blackening of turbinates. MRI PNS showed lesions in right maxillary and ethmoidal air sinuses, right middle turbinate involvement and bilateral maxillary hypertrophy suggestive of rhino-orbito-cerebral mucormycosis (Figure 2).

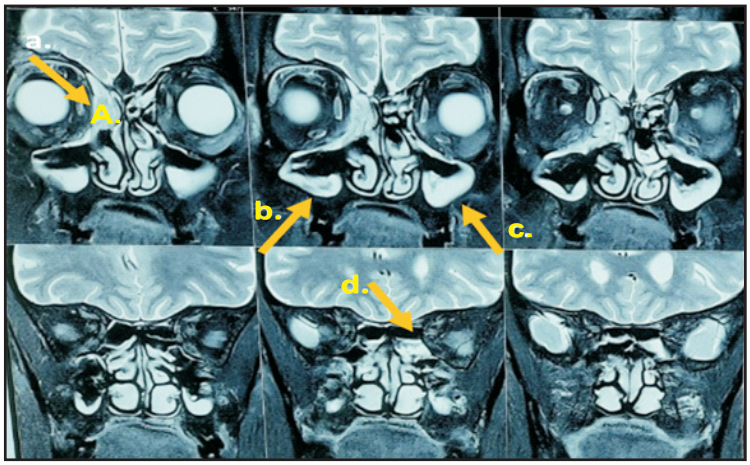


Fig 2: T2 weighted MRI paranasal sinus image in coronal section showing (a) heterogenous signal in right ethmoidal and supraorbital air cells suggestive of fungal elements; mucosal hypertrophy in (b) right and (c) left maxillary sinuses; (d) hyperintense signal in left sphenoid sinus suggestive of mucosal hypertrophy.

He was immediately posted for surgical debridement. Right functional endoscopic sinus surgery (FESS) with debridement and orbital decompression was performed and all necrotic tissue was removed. Right middle turbinate was excised and ethmoidectomy with wide sphenoidectomy was performed. Mucosa was sent for histopathological and microbiological examination. Histopathology revealed broad, irregular, pauciseptate, wide angle branching fungal hyphae suggestive of mucormycosis. A 10% KOH wet mount of tissue showed plenty pus cells and hyaline broad aseptate right angled branching fungal hyphae suggestive of Mucormycetes (Figure 3).

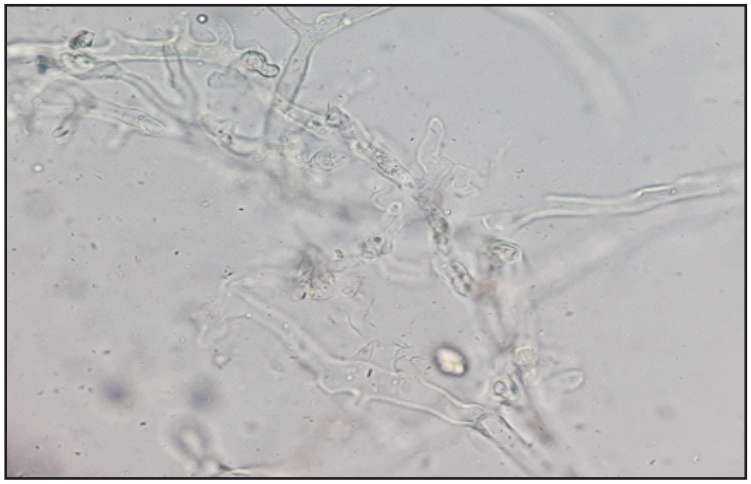


Fig 3: 10% KOH wet mount examination of tissue showing plenty of hyaline broad aseptate right angled branching fungal hyphae suggestive of Mucormycetes

Fungal culture grew *Rhizopus arrhizus* after 4 days of incubation (Figure 4).

The final diagnosis was a case of Rhino-orbital-cerebral mucormycosis stage 2 due to *Rhizopus arrhizus* in a COVID-19 infected diabetic patient.

After surgery, the patient was treated with liposomal amphotericin B 250 mg in 5% dextrose for 14 days and amphotericin B lipid complex for nasal application. Nasal saline drops and nasal douching with alkaline nasal solution (Nacl+ $NaHCO_3$+ xylitol) was also performed. The patient improved and was finally discharged in a stable condition.

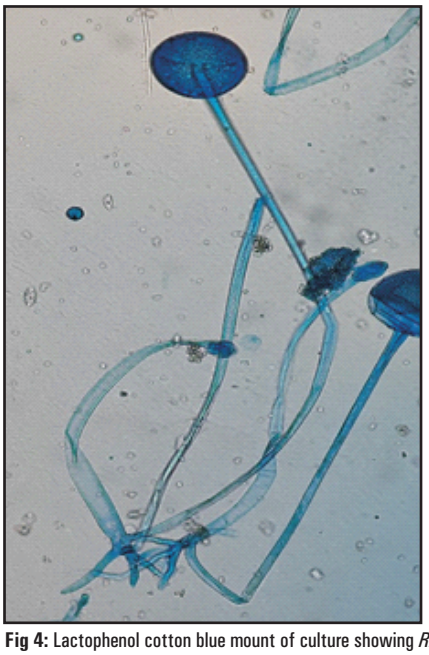


Fig 4: Lactophenol cotton blue mount of culture showing *Rhizopus arrhizus.*

Oral antifungal Posaconazole was given for 4 months and serial MRI imaging and endoscopy showed no residual or recurrent lesion and patient is free of disease at 6 months of follow up.

Conclusion: Our case highlights the successful management of COVID associated Mucormycosis with surgical debridement and oral Posaconazole.

In focus : *Tuberculosis*

Six month regimen for TB treatment is not sacrosanct !!

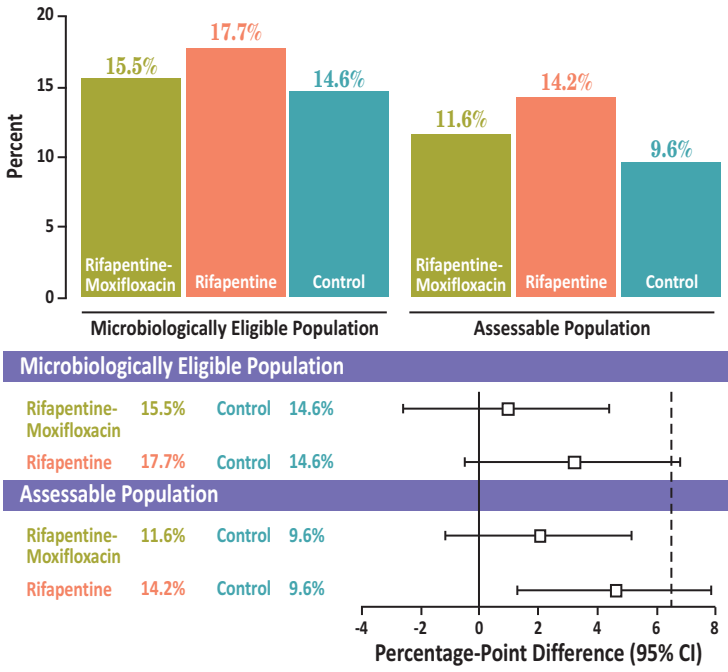
Source: N Engl J Med 2021; 384:1705-1718

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

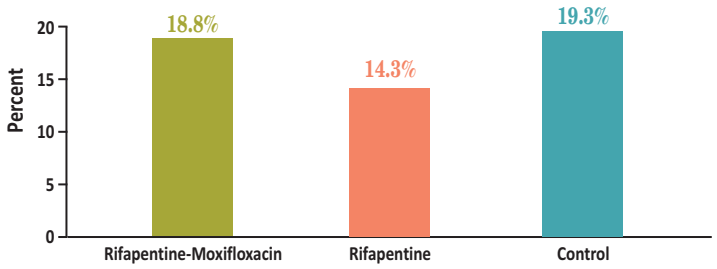
Multiple attempts to shorten the treatment of drug-susceptible pulmonary tuberculosis have met with failure in the last four decades. Rifapentine is a cyclopentyl derivative of rifampin, and has good activity against *Mycobacterium tuberculosis*. It's longer half-life makes the drug an attractive option for increasing the duration of exposure to rifamycins while maintaining the once-daily dosing schedule that facilitates the completion of treatment. The addition of moxifloxacin to other first-line antibiotics against tuberculosis, including rifampin, accelerates sputum-culture conversion to negative status early in the course of treatment but is insufficient to shorten the duration of therapy to 4 months.

In this elegant 34 sites RCT spanning 13 countries, 2343 participants were randomly assigned to the standard 6-month regimen (8 weeks of once-daily rifampin, isoniazid, pyrazinamide, and ethambutol, followed by 18 weeks of once-daily rifampin and isoniazid [the control group]) or one of two experimental 4-month regimens (8 weeks of once-daily rifapentine, isoniazid, pyrazinamide, and ethambutol, followed by 9 weeks of once-daily rifapentine and isoniazid [the rifapentine group], or the same regimen but with the fluoroquinolone moxifloxacin substituted for ethambutol, followed by 9 weeks of once-daily rifapentine, isoniazid, and moxifloxacin [the rifapentine–moxifloxacin group]). The primary efficacy outcome was survival free of tuberculosis at 12 months.

Absence of tuberculosis disease-free survival at 12 months after randomization



Grade 3 or higher adverse events



Conclusion: In this trial, a 4-month regimen that included rifapentine at a daily dose of 1200 mg and moxifloxacin at a daily dose of 400 mg had an efficacy that was noninferior to that of the standard 6-month regimen across the primary, secondary, and sensitivity analysis populations.

Rifapentine with moxifloxacin was non-inferior to the control in the microbiologically eligible population (15.5% vs. 14.6% had an unfavorable outcome; difference, 1.0 percentage point; 95% confidence interval [CI], −2.6 to 4.5) and in the assessable population (11.6% vs. 9.6%; difference, 2.0 percentage points; 95% CI, −1.1 to 5.1).Rifapentine without moxifloxacin was not shown to be non-inferior to the control in either population (17.7% vs. 14.6% with an unfavorable outcome in the microbiologically eligible population; difference, 3.0 percentage points [95% CI, −0.6 to 6.6]; and 14.2% vs. 9.6% in the assessable population; difference, 4.4 percentage points [95% CI, 1.2 to 7.7]).

The implications of this study are profound - an easily implementable shortened TB regimen for public health programs, potentially better compliance and decreased health care costs. This is only the beginning of many attempts at further shortening the prolonged TB treatment.

Infectious diseases update

Ibrexafungerp: First approval

Source: Drugs 2021;81:1445-1450

On June 1, 2021, the U.S. Food and Drug Administration approved the new antifungal Ibrexafungerp, for the treatment of vulvovaginal candidiasis. It is the first novel antifungal drug class to be approved in more than 20 years. Ibrexafungerp is an orally active triterpenoid antifungal drug that inhibits β-1, 3-D glucansynthetase and thus compromises the integrity of fungal cell walls. The mechanism is similar to echinocandins but the binding site is different. Ibrexafungerp is active against *Candida* (including the resistant species like *C. glabrata*, *C. parapsilosus*, and *C. auris*), *Aspergillus* species, *Cryptococcus*, and dimorphic fungi. In fact, Ibrexafungerp demonstrates broad *in vitro* activity against wild - type, azole - resistant, and echinocandin - resistant *C. glabrata species*. The dosage for vulvovaginal candidiasis is 300 mg oral (two tablets of 150 mg) twice a day for one day, for a total treatment dosage of 600 mg. Trials are underway for Ibrexafungerp to be used as an oral step down in invasive candidiasis and as combination therapy with voriconazole for invasive pulmonary Aspergillosis.

Visual challenge : *What is your diagnosis?*

Contributed by : Dr. DP Misra, Dr. JR Parida, Dr. AC Chowdhary, Dr. KC Pani, Dr. N Kumari, Dr. N Krishnani Dr. V Agarwal

A twenty-year old lady presented with nodular skin lesions on limbs and face for the past year. She had associated arthralgias for the past 3 months. Over the past week, the skin lesions had increased and had developed areas of skin necrosis and ulceration (Figures 1-3). Investigations revealed mild anemia, neutrophilic leucocytosis and elevated ESR.

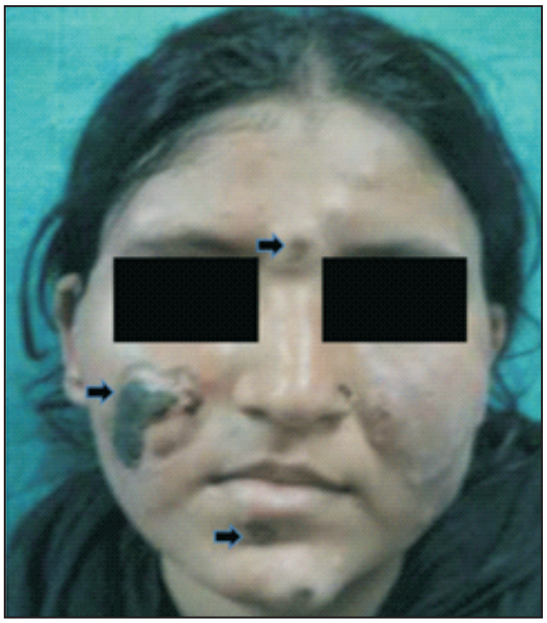


Fig1 : Face showing papulonodular lesions over the left cheek and necrotic skin infarct with irregular borders over the right cheek, chin, and forehead (black arrows).

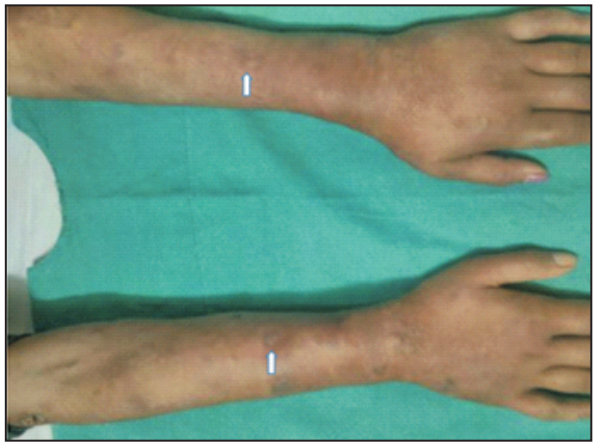


Fig 2 : Forearms and hands showing papulonodular infiltrating erythematous lesions over the forearms and dorsum of hands (white arrows).

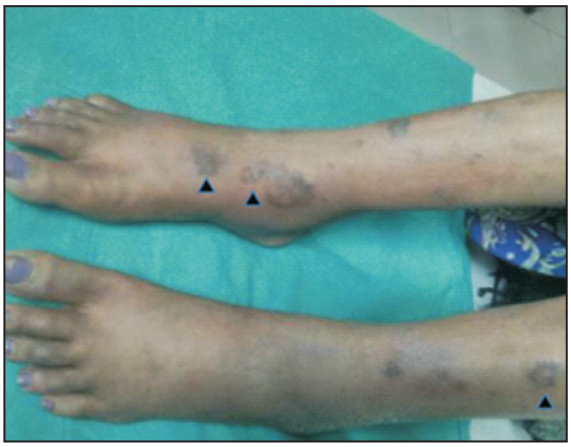


Fig 3 : Legs showing papules and nodules on dorsum of legs, necrotic lesions with irregular borders over lower leg and feet,and dorsal tenosynovitis of both feet (black arrowheads)

Medicolegal Corner: *The Epidemic Diseases Act, 1897 & Amendment, 2020*

Contributed by: Dr. Rajesh Harsvardhan

Legal frameworks are important during crisis situations as they augment a government's response to public health emergencies and also safeguard the rights and duties of citizens. It was thus important to review the act with reference to its current relevance, its adequacy to tackle deadly virus outbreaks, surveillance and privacy issues and, most importantly, it's limitations.

Epidemic Diseases Act, *1897*	Epidemic Diseases Act *Amendment, 2020*
The Epidemic Act was introduced by the British in 1897 to tackle Bubonic Plague in Bombay. It aimed at 'better prevention of epidemic diseases'.	The Epidemic Diseases (Amendment) Act now criminalizes any act of violence against healthcare personnel including doctors, nurses, and paramedics.
Provides the power to exercise for the control and to prevent any epidemic or spread of epidemic in the States or Country.	The amendment aimed primarily at protecting health care personnel engaged in combating the coronavirus and expanded powers of the central government to prevent the spread of such diseases.
The states may authorize any of its officers or agency to take such measures if the State feels that the public at large is threatened with an outbreak of any dangerous epidemic.	No person shall indulge in any act of violence against a health care service personnel or cause any damage or loss to any property during an epidemic.
Any person disobeying any regulation or order made under this act shall be deemed to have committed an offence punishable under section 188 of the Indian Penal Code.	It made acts of violence against healthcare personnel and damage to property, including a clinical establishment, quarantine facility or a mobile medical unit, during an epidemic punishable under law. Persons convicted of such offences will also be required to pay compensation to the victims.

Editor's choice: *Citations to ponder*

1. Kampf, G., Todt, D., Pfaender, S., *et al*, (2020). Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. *The Journal of Hospital Infection*; 104(3), 246–251. https://doi.org/10.1016/j.jhin.2020.01.022

The authors reviewed the literature on all available information about the persistence of human and veterinary coronaviruses on inanimate surfaces as well as inactivation strategies with biocidal agents used for chemical disinfection in healthcare facilities. The analysis of 22 studies reveals that human coronaviruses can persist on inanimate surfaces like metal, glass or plastic for up to 9 days, but can be efficiently inactivated by surface disinfection procedures with 62-71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite within 1 minute. As no specific therapies are available for SARS-CoV-2, early containment and prevention of further spread will be crucial to stop the ongoing outbreak and control this pandemic.

2. Mirzayev, F., Viney, K., Linh, N. N., *et al* (2021). World Health Organization recommendations on the treatment of drug-resistant tuberculosis, 2020 update. *The European Respiratory Journal*; 57(6), 2003300. https://doi.org/10.1183/13993003.03300-2020

The WHO has published updated guidelines for treatment of MDR-TB in June 2021 that contain recommendations on shorter or longer all oral treatment regimens including the medicines to be used and other supportive measures. For non-pregnant patients with uncomplicated MDR-TB (with no FQ resistance), the WHO supports treatment with a bedaquiline-containing regimen rather than a regimen including injectable agents.One preferred regimen, especially in the setting of additional FQ resistance is BPaL, an all-oral regimen of bedaquiline, pretomanid, and linezolid for 6 months.In settings where pretomanid and/or linezolid cannot be used, a 9- to 12-month all-oral multidrug regimen that includes bedaquiline for the first 4 to 6 months is another option.

3. Duval X, Le Moing V, Tubiana S, *et al*, (2021). Impact of systematic whole-body 18F-Fluorodeoxyglucose PET/CT on the management of patients suspected of Infective Endocarditis: The prospective multicenter TEPvENDO Study. *Clinical Infectious Diseases*;73(3):393-403. doi:10.1093/cid/ciaa666

For many years clinicians have tweaked the Duke's criteria for the diagnosis of infective endocarditis (IE). In a significant number of patients, the diagnosis of IE remains elusive, especially among those with non-contributory echocardiography or distant metastatic manifestations. In this multicentre prospective study, on 140 adult patients with high suspicion for IE (70 with PV-IE and 70 with NV-IE), researchers evaluated the impact of systematic whole-body FDG-PET/CT on the diagnosis and management of IE. The authors added abnormal valvular/perivalvular uptake as a major diagnostic criterion in both prosthetic and native valves—the modified ESC-2015 criteria. The therapeutic management was modified following 18F-FDG-PET/CT scan in 37 of the 140 patients (26.4%; 95% CI: 19.1%–35.5%) corresponding to 15 (21.4%) of the PV patients and 22 (31.4%) of the NV patients (P = .25). The study showed that PET was an important adjunct to management among patients with possible IE especially among patients with non-contributory echocardiogram.

Mix and match: *The Com-COV Trial*

Source: *Lancet* 2021 Aug 6; S0140-6736(21)01694-9

Contributed by: Dr.Vikas Agarwal, Dr. Richa Mishra

Mixing vaccines got a shot in the arm with the Com-COV trial- a participant blinded, randomized non-inferiority trial evaluating vaccine safety, reactogenicity & immunogenicity of heterologous prime boosting over homologous prime boosting. Published data suggests that a heterologous schedule based on mixing Astra Zeneca- an adenoviral vectored vaccine (ChAd) and Pfizer- BbNTech-an mRNA vaccine (BNT) could not only be highly immunogenic but also ease logistical problems inherent in low-income & middle-income countries, when administered at a 28-day interval in heterologous and homologous vaccine schedules

COVID-19 vaccine-naïve adults aged 50 years and older, with no or well-controlled mild- to- moderate comorbidities were eligible for recruitment.830 participants were enrolled and randomized into 4 cohorts with various combinations of ChAd and BNT vaccines. Results were reported for 463 participants with a 28-day prime-boost interval. The primary end point was the Geometric Mean Ratio (GMR) of serum SARS-CoV-2 anti- spike concentration (measured by ELISA) at 28 days after boost, when comparing ChAd/ BNT with ChAd/ ChAd and BNT/ChAd with BNT/BNT.

At day 28, post boost, the GMR of SARS-CoV-2 anti- spike IgG in ChAd/BNT recipients (12906 ELU/ml) was non-inferior to that in ChAd/ ChAd recipients (1392 ELU/ml), with a GMR of 9.2. But the study did not show non-inferiority of the heterologous schedule against the homologous schedule (BNT/BNT).Overall, BNT/BNT schedule was observed to be highly immunogenic, while ChAd/BNT had a high cellular immune response and ChAd/ChAd was least immunogenic but proven efficacious in preventing serious COVID were reported.

To conclude, data support flexibility in the use of heterologous prime- boost vaccination using ChAd and BNT COVID-19 vaccines.Therefore, it is safe to mix 2 technically different vaccines-one is mRNA while the other is a viral vector vaccine.

Key Contributions of SGPGIMS Hospital Infection Control Committee & the Deptt. of Hospital Administration during COVID-19 Pandemic

Contributed by : Dr. R. Harsvardhan, All Residents of DoHA & All Staff of HIC Cell

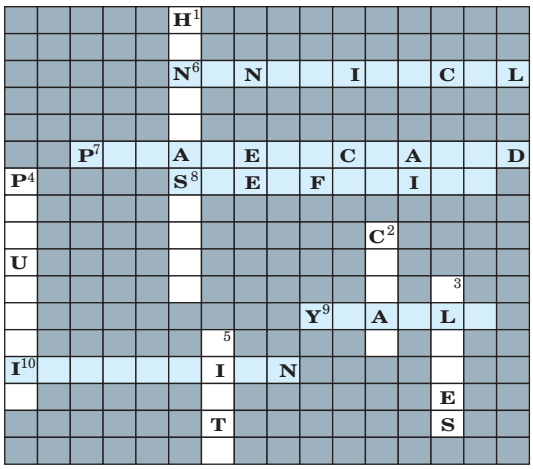
Infection Prevention Control (IPC) and quality standards of healthcare are essential for the well-being and safety of patients, their families, health workers and the community. A well-organized IPC program is a basic requirement in every Health Care Facility to assist HCWs in the provision of quality healthcare. The Hospital Infection Control Cell, is an integral component of the IPC program of the SGPGIMS. It is the first step a Health Care Facility takes towards ensuring stringent Infection Prevention & Control practices and is responsible for establishing and maintaining the IPC program and its various functions of monitoring, surveillance, reporting, research and education.

Chaos descended the world after the first human cases of COVID-19 was identified in the city of Wuhan, Hubei province, China, in December 2019. COVID-19, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) rapidly progressed into a pandemic dismantling the healthcare resources of countries across the globe and with the hospitals being overburdened with patients, Infection prevention & Control measures needed to be monitored & rigorously followed during the pandemic.

The HICC played a key role in ensuring appropriate interventions are administrated to safeguard the lives of patients & healthcare workers, alike. In order to ensure operational management of non-clinical/administrative concerns related with execution/delivery of healthcare services at SGPGIMS during COVID-19 pandemic, following contributions were made by the SGPGIMS Hospital Infection Control Committee & the Deptt. of Hospital Administration:

- **Commissioning of Central Control Room at RCH - I & Control Room for RCH - II, Holding Area & Non COVID Areas**. More than 7000 complaints were received & resolved through both the Control Rooms which were run 24x7 by the Residents of the Deptt. of Hospital Administration to ensure smooth functioning of the COVID-19 facility at SGPGIMS.
- **Hospital Infection & Prevention & Control Manual**, especially attuned to COVID 19 was published & was uploaded on SGPGIMS Website, which helped hospitals all over UP & even beyond.
- **Compendium of Guidelines for Sanitation, BMWM, DBM** …. Etc was published & was uploaded on SGPGIMS Website, which helped hospitals all over UP.
- **Compendium of Govt. of India, UP & SGPGIMS Guidelines** for all dimensions of COVID 19 management was published.
- **Serial Capacity Building Programs &Workshop** on **Standard Precautions vis-à-vis COVID – 19** were organised for combating COVID-19 transmission.
- **Graded Sanitization of SGPGIMS Hospital & Campus** was carried out all through the COVID-19 pandemic, all through the year, that included special sanitisation drives.
- **Printing & Placement of appropriate IEC Posters for COVID-19** at apt locations, was carried out, to sensitize the Healthcare Workers & motivate them to follow ideal infection prevention and control practices.
- **Constitution & commissioning of the Rapid Response Team** to meet with the immediate need for disinfection & sanitation at RCH – I & II, was done.
- In order to provide safe packing & transfer of dead bodies of COVID-19 patients and to ensure the safety of the healthcare workers involved in the process, a **Dead Body Management Protocol** was established and was duly implemented.
- A **Standard Operating Protocol** for **Bio Medical Waste Management** at the healthcare facility was established and compliance was ensured for maintaining levels of infection control, through rigorous monitoring.
- **Serial Onsite Training Program was Organised on Stress Management** & to allay apprehensions, in all the patient care areas of Non Covid hospital.
- **Dedicated Team for Healthcare Worker's Surveillance & Contact Tracing** was constituted for Contact tracing of COVID-19 within SGPGIMS Campus through professionally trained & dedicated teams who provided services 24 x 7 x 365.
- **Infrastructure was augmented by way of following interventions:**
  - **Procurement of 02 Mortuary Cabinets** with the capacity of storing 03 bodies in each cabinet.
  - Procurement of 01 x **Autoclave** (450 Ltrs) for BMWM.
  - Procurement of 10 x **Compactor Compatible Metallic Bins** (1100 Ltrs).
  - Procurement of 12 x **Manual Sprayer** (Backpack).
  - Arranged for the **donation of Cleaning Material** worth INR 26,00,000.00 (Rupees Twenty Six Lakhs only) through CSR of the firm via NGO Sewamob.

Brain teaser



Down:

1. What is the most effective way to prevent the spread of germs?
2. When prepping, move from _____ to dirty.
3. PPE used during examination of non-intact skin/mucosal surface.
4. The second leading cause of death from 1900 to 1937 was?
5. How many seconds do you wash your hands for?

Across

6. Items that come into contact only with intact skin.
7. High level disinfectant commonly used in the GI lab for processing flexible endoscopes. (2 words)
8. The amount of time an item may be considered sterile. (2 words)
9. How often do we receive the flu vaccine?
10. Nursing a patient separately, usually in a single room, to reduce cross infection to, or from, the patient

Answer to the visual challenge

Answer to Crossword :

DOWN

1.Handwashing 2. Clean 3.Gloves 4. Pneumonia 5. Sixty

ACROSS

6. Noncritical 7. Peracetic Acid 8. Shelf Life 9. Yearly 10. Isolation

Lepromatous leprosy with Lucio phenomenon

A skin biopsy revealed foamy histiocytes with acid fast bacilli infiltrating into the capillary wall (Figures 4 and 5).

Figure 4 : Skin biopsy from leg (hematoxylin and eosin stain, 20X magnification) showing largely unremarkable epidermis. Dermis shows collection of foamy histiocytes (black arrowhead).

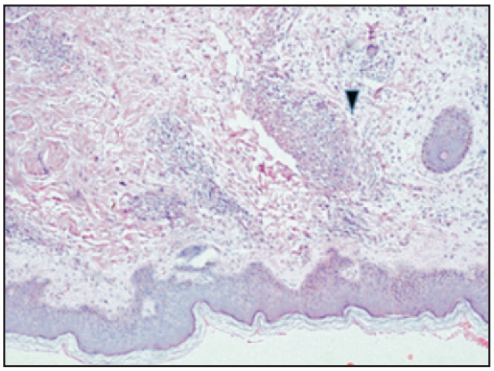
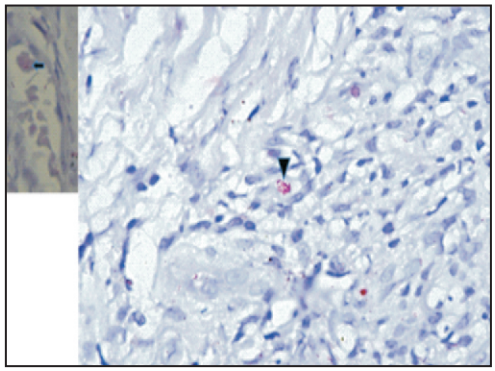


Figure 5 : Magnified view of dermis showing foam cells with collection of lepra bacilli (globi) black arrowhead) Wade-Fite stain, 100X magnification); inset shows infiltration of capillary wall with lepra bacilli (black arrow) suggestive of Lucio phenomenon.



Upgradation of Biomedical Waste Management Plant

The **Bio Medical Waste (Management & Handling) Rules, 2016, state that** - after ensuring treatment by autoclaving or microwaving followed by mutilation or shredding, whichever is applicable, the recyclables from the treated bio-medical wastes such as plastics and glass, shall be given to recyclers having valid consent or authorisation or registration from the respective State Pollution Control Board or Pollution Control Committee.

In order to implement these rules more effectively and to improve the processing, treatment and disposal of Plastic category of bio-medical wastes in an environmentally sound processing unit, thereby, reducing the bio-medical waste & its adverse impact on the environment, the **Bio Medical Waste Management Plant at SGPGIMS, has been rationally upgraded, as & when needed, technologically.**

In this context, **an Autoclave of 450 Ltrs capacity was procured, installed & commissioned in 2020, with the aim of efficient processing of plastic category of BMW being generated at SGPGIMS.**

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