Memo. No.-HPH/9M-21/2020/154

Date- Kolkata, 15th July, 2020

To
The MSVP, Medical College Hospital, Kolkata / ID & BG Hospital, Kolkata/
Murshidabad Medical College Hospital/ COM & Sagar Datta Hospital/ North
Bengal Medical College Hospital;
The Chief Medical Officer of Health, District- ....................... (all Districts);
The Superintendents (All Govt. Covid Hospitals);
The Director / CEO / Medical Superintendent (All Private COVID Hospitals).

Sub:- State Guideline for Rational Use of Antibiotics in the

Dear Sir/Madam,

Forwarding herewith the State Guide line for Rational use of Antibiotics in the
Management of COVID-19. This document has been prepared by a Committee which
was formed in reference to Memo no. DME-Spl.Corresp/2020/178 dated 03.07.2020.
under the chairmanship of Dr. Santanu Kumar Tripathi, Professor & Head,
Department of Clinical & Experimental Pharmacology, School of Tropical Medicine,
Kolkata.

Please arrange to circulate the same among all concerned and please take
necessary measures to implement the guideline at an early date along with necessary
institutional and logistics arrangement.

[Signatures of Directors]

Copy forwarded for information & necessary action to:
1. The Director, IPGMER/ School of Tropical Medicine, Kolkata.
2. The Principal, ......................... (all Medical Colleges).
3. The Medical Superintendent cum Vice Principal, ....................... (all Medical
   College Hospitals).
4. The Mission Director, NHM, Govt. of West Bengal.
5. The Addl. Secretary (PHP), Govt. of West Bengal.
6. The Jt.Secretary (PHP), Govt. of West Bengal, Swasthya Bhawan.
7. The Jt.DHS (PH&CD) and SSO, IDSP, Govt. of West Bengal.
8. Dr. S.K.Tripathi, Professor & Head, Dept of Clinical & Experimental, Pharmacology,
   STM, Kolkata.
9. The Dy.Chief Medical Officer of Health, ....................... (all Districts).
10. The State Coordinator, IT Cell, Swasthya Bhawan, for posting of the guideline in
    the Covid-19 section of departmental website.

[Signature]

Dy. Director Health Services (PH)
Govt. of West Bengal
Government of West Bengal
Department of Health & Family Welfare

[An Interim Guideline that shall be periodically updated]

General Principles:
1. Covid-19 being a viral disease, antibiotics per se have no role in it. Do not prescribe antibiotics routinely in Covid-19 unless bacterial co-infection is suspected.
2. Differentiate between infection and colonisation clinically and based on infection markers, before considering antibiotic prescribing, switch or escalation.
3. In a Covid-19 patient who turned afebrile, a new onset fever may prompt suspicion of secondary bacterial infection. However, some Covid-19 patients show biphasic pattern of fever.
4. Consider using antibiotics to only those patients with severe Covid-19 infection who have high oxygen demands and show signs of rapidly progressing respiratory failure. All patients with severe Covid-19 should not receive empiric antibiotics, if there is no clinical suspicion of and/or there is absence of biochemical or radiological markers of bacterial infections.
5. Antibiotics, when administered, should be done as per the PK/PD norm, irrespective of PPE usage.
6. Consider empiric prescribing of antibiotics only in cases where bacterial infection cannot be excluded, e.g., COPD exacerbations with purulent sputum or radiological evidence of pneumonia, while awaiting Covid-19 test results. In case of confirmation of diagnosis as Covid-19, try to de-escalate antibiotic therapy as early as possible.
7. Consider antibiotic prescribing, guided by assessment of biomarkers of bacterial infection (total leucocyte count, C-reactive protein, pro-calcitonin), as per access to laboratory facility. However, C-reactive protein may be high in Covid-19 due to inflammation, and therefore may not be very reliable.
8. A CT-thorax, whenever available and/or feasible, may allow for a more exact determination of the typical infiltrate associated with bacterial lower respiratory tract infection as opposed to the ground glass opacities of Covid-19. However, chest X-ray may also help.
9. The choice of antibiotics should be guided by local antibiogram.
10. Microbiological tests (e.g., urine culture, blood cultures, sputum culture, as appropriate) should ideally be performed before initiation of any antibiotic treatment. However, remember that a positive culture report does not necessarily prove presence of infection, unless this is accompanied by clinical signs and biochemical markers.
11. Once started, continuously re-evaluate antibiotic treatment intensively, and consider stopping it as soon as possible if the probability of bacterial super-infection is low, e.g.,
   - persistently low inflammatory biomarkers
   - negative culture tests
   - CT scan compatible with Covid-19 only
   Note that mere absence of fever should not be required as a criterion for stopping an antibiotic, since patients with Covid-19 often show persistent fever over several days.
12. If parenteral antibiotic treatment is started, consider switch to oral antibiotics as soon as the patient is able to take oral medications.
13. For patients in ICU requiring mechanical ventilation, apply the standard measures to prevent ventilator-associated pneumonia (VAP) and other healthcare-associated infections.
14. Do not give antibiotics prophylactically to prevent bacterial pneumonia or other infections.
15. If during Covid-19 treatment, a secondary respiratory worsening occurs, do consider use of antibiotics after taking adequate respiratory samples and performing radiological diagnostics. Secondary worsening commonly seen at day 7–9 due perhaps to the hyper-inflammatory phase (adaptive immune reaction) rather than a bacterial super-infection. Other causes of respiratory worsening, e.g., cardiogenic failure, pulmonary embolism, fluid overload etc. should be ruled out.
16. Suspected Covid-19 patients may present with other infections such as urinary tract infections, skin and soft tissue infections, intra-abdominal infections etc. These should be considered in the differential diagnosis (especially in high risk patients) and be managed according to established guidelines. Antibiotic therapy used in such cases must be reviewed as more clinical information becomes available and the duration of therapy should be kept short, not exceeding 5 days. If a given antibiotic treatment
fails to demonstrate desired benefit, consider switch or stop. In the cases of failure of 5-day antibiotic treatment, also consider empiric/lab evidenced (based on fungal culture and galactomannan assay, where available) antifungal therapy with azoles (e.g., Fluconazole for Candida albicans and Voriconazole for Aspergillus) or echinocandins.

17. Empiric coverage for Staphylococcal infection should be reserved for high risk patients. Consider de-escalation once culture/report indicates absence of infection.

18. Standard infection control measures should be strictly followed at all times.

19. The reason for prescribing antibiotic, whether empiric or definitive, should be clearly documented in the clinical notes. Always provide summary clinical notes, mention about antibiotic usage if any, to all Covid-19 patients referred to another hospital.

Choice of Agents:

- If antibiotics are considered, a β-lactam antibiotic providing coverage for S. pneumoniae & Staph aureus should be the first option, e.g., Amoxicillin-Clavulanic acid or a third-generation cephalosporin +/- an anti-Staph agent.
- Avoid use of macrolides and quinolones because of cardiac side effects—considering that other agents associated with cardiac side effects such as Hydroxychloroquine and Lopinavir/Ritonavir may be co-prescribed.
- If atypical coverage is considered necessary (e.g. COVID-19 not yet confirmed and suspicion of Legionella infection) consider prescribing Doxycycline. Avoid routine atypical coverage, given the low a priori probability of superinfection with atypical pathogens.
- In general, the empiric choice of specific antibiotics should ideally be dictated by local antibiograms and resistance patterns. In absence of the same, the following agents may be considered:

Suspected cases of community acquired pneumonia:

Mild to moderate cases, use any of the following for 5 days:

- Co-Ampicillin 500mg/125mg orally 8 hourly, with Doxycycline orally 200mg on first day and then 100mg once daily

Severe cases, use any of the following for 5-8 days:

- Co-Ampicillin 1.2g intravenously 8 hourly
- Ceftriaxone 2g intravenously once daily
- Piperacillin-Tazobactam 4.5gm intravenously 6 hourly
- Imipenem-Glaxastine 1g intravenously every 6 hourly (only in cases of prior hospitalization or antibiotic use)
- Cefoperazone-Sulbactam 3gm intravenously 12 hourly (only in cases of prior hospitalization or antibiotic use)

If MRSA infection is suspected or confirmed in the severe cases, add any of the following for 5-8 days:

- Linezolid 600mg orally intravenously 12 hourly
- Ceftaroline fosamil: 600mg intravenously 8 hourly
- Teicoplanin: 6 mg/kg intravenously 12 hourly for initial 3 doses, then once daily

Suspected cases of hospital-acquired pneumonia:

Mild to moderate cases, choose any of the following for 5 days:

- Co-Ampicillin 500mg/125mg orally 8 hourly
- Doxycycline: 200mg on first day, then 100mg once daily, orally
- Co-trimoxazole: 960mg orally 12 hourly

Severe cases (signs of sepsis or ventilator-associated pneumonia), choose any of the following for 5-8 days:

- Piperacillin with tazobactam: 4.5g 6 hourly
- Meropenem 1g intravenously 8 hourly

If MRSA infection is suspected or confirmed in the severe cases, add any of the following for 5-8 days:

- Linezolid: 600 mg orally or intravenously 12 hourly
- Teicoplanin: 6 mg/kg intravenously 12 hourly for initial 3 doses, then once daily

Note: This document covers confirmed Covid-19 infections only. The suspected Covid-19 infection or SARI cases should be managed as per existing guidelines for community acquired pneumonia.
Laboratory Confirmed Covid-19
Do not use antibiotics

Look for clinical signs of bacterial infection:
- New onset fever
- Cough with expectoration
- High oxygen demands
- Rapidly progressing respiratory failure
- Signs of bacterial infection of specific site e.g., burning micturition, pain abdomen etc.

Secondary bacterial infection suspected

Send Urine culture, blood culture, sputum culture etc.

Look for microbiological/biochemical/radiological markers to confirm bacterial infection like:
- Pro-calcitonin >1.1
- Leucocytosis (TLC>11000/cumm)
- Radiological evidence of pneumonia in CT Thorax or Chest X-ray

Start empirical antibiotic therapy

Change the antibiotic as per report, if necessary and continue for 5 days

Re-evaluate antibiotic treatment intensively

No optimal response or worsening

Escalation/change of antibiotic

Stop antibiotic

- Persistently low inflammatory biomarkers
- Negative culture test
- CT scan compatible with Covid-19

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