

# Covid-19; IV Metronidazole /Tinidazole Reduces Elevated Chronic ESR and Raised CRP, Prevent Mortality

Rajesh Kumar Singh

## ABSTRACT

Covid-19 severity depend upon the value of chronic ESR at the time of infection, elevated chronic ESR caused by *Entamoeba histolytica* leads to lymphocytopenia and weak RES (reticuloendothelial system) and this condition causes weak phagocytosis hence poor immunity and more susceptibility towards covid-19 infection. Treating covid-19 with IV metronidazole /tinidazole ± quinolone leads to reduction of elevated chronic ESR, indirectly improving immunity of patients and helps in reduction of CRP. Early addition of IV metronidazole /tinidazole ± quinolone prevent scarring /fibrosis of lung parenchyma and help faster recovery of patients.

**Keyword:** Covid-19, *Entamoeba histolytica*, ESR, CRP, Lymphocytopenia, IV metronidazole/Tinidazole.

Early and effective line of treatment is required to save life of covid-19 mild, moderate and severe patients. Numerous clinical trials are underway for drugs that have shown in vitro efficacy but there is currently no clear evidence of what therapy is efficacious to improve prognosis in patients infected with covid-19 (SARS-CoV-2).<sup>1</sup> Even less is known about the complication of covid-19 infection and their treatment.<sup>2</sup> The symptoms develop within 24 hours of infection and over time can lead to life threatening condition. Hence it is very important to give very specific drugs that is going to help and save life of covid-19 patients that control raised CRP and reduces elevated chronic ESR and improves immunity of patients simultaneously, therefore prognosis and early effective treatment is required that reduces mortality and save life.<sup>3</sup>

Due to lacunae of covid-19 infection and exact cause of immunity in comorbidity leads to high mortality and poor recovery, lot of speculation are made regarding treatment of covid-19 till date but no research culminate to save life.<sup>4</sup>

Current treatment protocol for covid-19 is ineffective and all the drugs used i.e. Remdesivir<sup>5</sup>, Azithromycin<sup>6</sup> and Ivermectin<sup>7</sup> have no role at root cause in reducing the sign and symptoms finally deterioration of condition leads to ARDS ( acute respiratory distress syndrome ) and death of patients , none of drugs has got any mechanism of action in inhibiting or killing covid-19 virus directly or indirectly.

Since beginning it is seen that immunity plays vital role but unfortunately it is unknown what causes low immunity in comorbidity and how exactly immunity can be improved, as a result no control over fatality.<sup>8,9,10</sup>

It is seen in retrospective cohort study that in all the chronic diseases, elevated chronic ESR due to infection of *Entamoeba histolytica* is causing lymphocytopenia and weak RES (reticuloendothelial system) leads to weak immunity of patients. Elevated chronic ESR is inversely proportional to production of lymphocytes and monocytes, higher the value of chronic ESR in patients weak will be the production of lymphocytes and monocytes and these patients are more susceptible to covid-19 severe infection. Early use /addition of intravenous metronidazole /tinidazole ± quinolone leads to reduction of elevated chronic ESR and simultaneously strengthening and enhancing the production of Lymphocytes and monocytes, indirectly improving phagocytosis as a result reduction of raised CRP hence faster recovery of patients.<sup>11,12,13,14</sup>

Early use of intravenous metronidazole / tinidazole ± quinolone prevents deterioration of lung parenchyma i.e. prevent scarring of alveolar region and prevent fibrosis of larger airways leads to faster recovery. Severity of covid-19 comorbidity is depend upon value of chronic ESR at the time of infection i.e. higher the value of chronic ESR at base line, severe will be the condition in covid-19 infection because of lymphocytopenia and weak RES ( weak immunity/weak phagocytosis ).<sup>15,16,17,18</sup>

It is seen that lymphocytopenia and weak RES is associated with elevated chronic ESR  $\geq 35$ mm/hr hence weak immunity, as the chronic ESR increases weaker will be the immunity of patients more susceptible will be towards covid-19 infection.<sup>19</sup>

Recovery and severity of covid-19 is depend upon value of chronic ESR at the time of infection and addition or delayed in addition of IV metronidazole / tinidazole ± quinolone as a empiric treatment in covid-19 comorbidity.

## CONCLUSION

Early addition of IV metronidazole / tinidazole in treatment protocol of covid-19 prevent scarring / fibrosis of lung parenchyma and save life.

Independent Chronic Disease Scientist, Jabalpur, MP, India.

**Corresponding author:** Rajesh Kumar Singh, 757/12 B, APR- 2 Colony, Bilhari, Mandla Road, Near Petrol Pump, Jabalpur, MP, Pin-482020, India

**How to cite this article:** Singh RK. Covid-19; IV metronidazole / tinidazole reduces elevated chronic ESR and raised CRP, prevent mortality. International Journal of Contemporary Medical Research 2021;8(9):11-14.

**DOI:** <http://dx.doi.org/10.21276/ijcmr.2021.8.9.7>



**Covid-19 and strong immunity**

Low chronic ESR

↓ ≤ 18mm/hr

Normal lymphocytes and monocytes counts in CBC ( strong immunity)

↓ ← covid-19 exposure

↓ Slight rise of CRP, symptoms of coryza for 2-3 days

strong phagocytosis

↓

Resolution of symptoms at home quarantine

↓

Recovery from covid-19

**Covid-19 and weak immunity**

Elevated chronic ESR ( In all comorbid condition )

Due to infection of Entamoeba histlytica

↓ ≥ 35mm/hr.

Low lymphocytes (lymphocytopenia) and Low monocytes(Weak RES)

↓ ← covid-19 exposure

Acute rise of CRP associated with increase in D-Dimer, LDH, Fever and cough

↓

Acute inflammation of airways

↓

Delayed in control of inflammation leads to scaring / Fibrosis of lung parenchyma

↓

Decrease in normal diffusion of O<sub>2</sub> at alveolar region

↓

ARDS

↓

Ventilation

↓

Death of patient

### Covid-19 treatment, MOA

Covid-19 infection associated with fever in comorbid condition

(Elevated chronic ESR due to *Entamoeba histolytica* with raised CRP due to SARS-CoV-2)

↓↔IV metronidazole / Tinidazole ± quinolone

Reduction of inflammatory mediators (chronic phase)

↓

Reduction of chronic ESR

↓

Improvement of Lymphocytes and monocytes counts (improvement of immunity)

↓

Improvement of effective phagocytosis

↓

Reduction of viral loads

↓

Reduction of CRP ,D-Dimer, LDH and fever

↓

Reduction of inflammation ( acute phase)

↓

Improvement of normal diffusion of O<sub>2</sub> at alveolar region

Improvement of spo<sub>2</sub> level and normalization of pulse rate

↓

Recovery of covid-19 patient

Note-Early addition of iv metronidazole/tinidazole ± quinolone leads to faster recovery of patient and prevent deterioration of lung parenchyma, treatment should be carried out at least for 15 -20 days , mild and moderate cases cases should be started with orals with right therapeutic dosages .

### REFERENCES

1. Shan Y, Pan C, Chen D. Management of critically ill patients with covid-19 in ICU : statement from frontline intensive care experts in wuhan. *Annals of intensive care* Springer 2020; 75:34-39.
2. Kirkcaldy R D, King B A, Brooks JT.Covid-19 and post infection immunity Limited evidence, many remaining question. *JAMA* 2020;323:2245
3. Treatment for covid-19. Harvard Health 2021
4. Callender L A, Curran M, Bates S M, Mairesse M, Weigandt J, Betts C J. Impact of preexisting comorbidities and therapeutics on covid-19. *Viral immunology* *Frontiers in immunology* 2020;23:34-39.

5. Beigel J H, Tomashek K M, Dodd L E, , Mehta A K. Remdesivir for the treatment of covid-19 –Final report. *The New England Journal of medicine* 2020;383:1813-1826.
6. Oldenburg C E, Pinsky B A, Brogdon J. Effect of oral Azithromycin Vs Placebo on covid-19 symptoms in outpatients with SARS-CoV-2 infection. *JAMA* 2021;326:490-498
7. Popp M, Stegemann M, Metzendorf M I, Gould S, Kranke P, Meybohm P, Skoetz N, Weib S. Ivermectin for preventing and treating covid-19. *Database Syst Rev.* 2021;7:CD015017.
8. Castle C S, Uyemura K, Rafi A, Akande O, Makinodan T. Comorbidity is a better predictor of impaired immunity than chronological age in older adults. *J Am Geriatr Soc.* 2005;53:1565-9.
9. Yu K K, Fischinger S, Smith M T, Atyeo C, Cizmeci D, Wolf C R, Layton ED, Logue J K, Aguilar M S, Shuey K, Loos C, Yu J, Franko N, Choi R, Wald A, Barouch D H, Koelle D M, Laufenburger D, Chu H Y, Alter G, Seshadri C. Comorbid illness are associated with altered adaptive immune response to SARS-Co V-2. *Insight.* 2021;6:e146242.
10. Feng X, Li S, Zhu J, Chen B, Xiong M, Cao G. Immune inflammatory parameters in covid-19 cases : A systemic review and meta analysis. *Front Med (Lausanne)* 2020;7:301.
11. Zaboli E, Majidi H, Navaei R A, Omran A H, Omran H A, Larijani L V, Khodaverdi V, Amjadi O. Lymphopenia and lung complications in patients with coronavirus disease -2019 ( Covid-19): A retrospective study based on clinical data *J Med Virol* 2021;93:5425-31.
12. Lopic I, Rogic D, Plebani M. Erythrocytes sedimentation rate is associated with severe coronavirus disease 2019(covid-19):a pooled analysis . *Clin Chem Lab Med.* 2020;58:1146-1148.
13. Zeng F, Huang Y, Guo Y, Yin M, Chen X, Xiao L, Deng G. Association of inflammatory markers with the severity of covid-19: a meta-analysis. *International journal of infectious disease Elsevier* 2020; 96:467-474.
14. Kandhro A H, Khatoon S, Seelro R. Lymphocytopenia in covid-19 patients , where are we now? *Hematology & transfusion international journal Medcrave* 2020;8:59-60
15. Gharebaghi R, Heidary F, Parvizi M. Metronidazole; a potential novel addition to the covid-19 treatment regimen. *Archives of academic emergency medicine* 2020;8:e40
16. Hegadekatti V, Hegadekatti K. Intravenous Tinidazole usages in covid-19 positive cases: a discussion. *SSRN, papers.ssrn.com* 2020:4
17. Ghahramani S, Tabrizi R, Ahmadizar F. Laboratory features of severe vs. non-severe covid-19 patients in Asian populations:a systemic review and meta-analysis. *Eur J Med Res.* 2020;25:30.

**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 01-08-2021; **Accepted:** 30-08-2021; **Published:** 30-09-2021