

## **Indomethacin in Covid-19 - Scientific evidence to try the drug**

It is very sad that a large number of patients are dying all over the world due to Covid-19 infections. Various drugs and other modalities are being tried to control the infection and reduce the mortality. The main cause of death seems to be the release of cytokines. Why some people are more prone to cytokine release is not clear.

Indomethacin is a time honoured drug used as an anti-inflammatory drug specially in arthritis. It has also been used to prevent cytokine release while using an anti-rejection drug OKT3 very successfully (1,2). It also has antiviral properties when tried in the lab. It has been effective in SARS infection in the lab to reduce the viral load and hasten recovery (3). The drug is effective against canine corona virus (4). Unlike other NSAIDs it does not affect the clotting system (5). On the contrary it prevents thrombosis in lungs in experiments with septicemia (6). The medicine has low side effect profile when used for short periods. It would be best to give indomethacin 25 to 50 mg twice a day or according to the body weight for at least 5 days to prevent the cytokine storm in symptomatic patients with Covid-19. The drug should be used early to save lives. It can reduce hospitalisations and spread of the virus by hastening recovery. Considering the scientific evidence and the low side effect profile a trial with Indomethacin is worthwhile to reduce deaths from Covid-19.

The proposal to try indomethacin was submitted to the ICMR, health minister India, UK govt and US govt on 29<sup>th</sup> April 2020. The chief medical officer of UK Dr Chris Witty has forwarded the proposal to the Therapeutic Task Force where it is under triage. Although there has been no reply from US govt 60 patients have been started on indomethacin in New York with promising results and Dr Jonathan Leibowitz has expressed interest in conducting a multinational case studies.

It is essential that we waste no further time in using indomethacin which is possibly superior to hydroxychloroquine according to Dr Jonathan Leibowitz.

Dr. Rajan Ravichandran M.D. Director Nephrology, MIOT Hospitals, Chennai, India

### References:

1. First, M. R., Schroeder, T. J., Hariharan, S., Alexander, J. W., & Weiskittel, P. (1992). The Effect Of Indomethacin On The Febrile Response Following Okt3 Therapy. *Transplantation*, 53(1), 91–93. doi: 10.1097/00007890-199201000-00017
2. Gaughan, W. J., Francos, B. B., Dunn, S. R., Francos, G. C., & Burke, J. F. (1994). A Retrospective Analysis of the Effect of Indomethacin on Adverse Reactions to Orthoclone OKT3 in the Therapy of Acute Renal Allograft Rejection. *American Journal of Kidney Diseases*, 24(3), 486–490. doi: 10.1016/s0272-6386(12)80906-1
3. Amici C, Di Caro A, Ciucci A, et al. Indomethacin has a potent antiviral activity against SARS coronavirus. *Antivir Ther.* 2006;11(8):1021-1030.
4. Xu, T., Gao, X., Wu, Z., Selinger, D. W., & Zhou, Z. (2020). Indomethacin has a potent antiviral activity against SARS CoV-2 in vitro and canine coronavirus in vivo. doi: 10.1101/2020.04.01.017624
5. Phadnaik BS, Parashar GC. Coagulation profile of indomethacin. (1982). *Indian Journal of Pharmacology*, 14(4), 355–356. Retrieved from <http://www.ijp-online.com/>
6. Short, B. L., Gardiner, M., & Fletcher, J. R. (1981). 1071 INDOMETHACIN IMPROVES HEMODYNAMIC AND CLOTTING STUDIES IN E.coli SEPSIS. *Pediatric Research*, 15, 621–621. doi: 10.1203/00006450-198104001-01097
7. Christine Clark, Indomethacin in Covid-19, May 2020, <https://medicalupdateonline.com/2020/05/indomethacin-covid19/>