Should Zinc be used in the treatment of COVID-19?

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KEY FINDINGS

There is no current clinical evidence that zinc or zinc supplements are effective adjunctive treatment for Covid-19.

- Zinc is an essential mineral taken as a supplement to boost the immune system, reduce the duration of illness such as diarrhea and the common cold.
- In vitro studies show that high concentrations of free Zn^{2+}, accompanied by compounds that stimulate its cellular importation, was found to inhibit the replication of various RNA viruses like SARS Coronavirus (SARS CoV) through inhibition of the RNA-dependent RNA-polymerase elongation.[1]
- There were no clinical studies that assessed the effectiveness of zinc, zinc compounds or zinc supplements, either as a direct or adjunctive treatment for COVID-19.
- At present, there are no ongoing studies on the use of zinc supplements for Covid-19.
- Oral zinc is commercially available for children and adults. The more common adverse reactions are nausea and vomiting.[2]
- According to WHO, there are currently no approved guidelines on the use of zinc and that further research is needed before any recommendations can be made.[3] There were no recommendations from CDC on zinc as an adjunctive treatment.

RESULTS

There were no clinical studies that assessed the effectiveness of zinc, zinc compounds or zinc supplements, either as a direct or adjunctive treatment for COVID-19.

Indirect evidence can be found on zinc and zinc supplements and their effect on the common cold and pneumonia.
Three meta-analyses discussed the effects of zinc on: (1) the incidence and duration of pneumonia (Lassi, 2016)[4] and observed significant difference in the incidence when chest examination and chest x-ray was used as basis (RR 0.79, 95% CI(0.71-0.88), p=0.000018), 4 trials/3261 children, but not when clinical symptoms were used; (2) reduction of duration of the common cold among participants aged 11 to 69 using two preparations of zinc (gluconate and acetate) and found no significant difference between the two, as well as the low-dose and high-dose levels (95% CI: −29 to + 32)[5]; and finally, (3) the Singh (2013) study involving 1387 patients ages 1 to 65, which revealed a significant difference in the duration and incidence of the common cold using zinc supplements but not on the severity, MD -1.03 (95%CI -1.72 to -0.34) and IRR 0.64 (95% CI 0.47-0.88 p=0.006), respectively[6].
The quality of evidence in both the Lassi and Singh studies were low to very low.

CONCLUSION

There is no current evidence to support the effectiveness and safety of zinc in the treatment of Covid-19.
One *in vitro* study has shown the possible effect of zinc on coronaviruses through the inhibition of its RNA-dependent RNA-polymerase but this was on SARS-COV and not the Covid-19 virus.[1]
Indirect evidence was found in three meta-analyses done in the past 5 years on zinc and zinc supplements against the common cold.

Declaration of Conflict of Interest

No conflict of interest

REFERENCES

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