

# Is baricitinib (Olumiant) an effective treatment for COVID-19?



## Evidence Syntheses

As of June 17, 2020, there is one evidence synthesis on the use of baricitinib for COVID-19 (published June 15, 2020), which reviews the available data on pharmacology, safety, and emerging clinical experience. **It does not report on effectiveness.** [1]

Epistemonikos has produced a Living Overview of the Evidence (L-OVE) for COVID-19, including baricitinib and other JAK inhibitors. This L-OVE uses systematic search methods is routinely updated, and includes information from clinical trials registers and preprint servers. [link]

## Single Studies

As of June 17, 2020, **no clinical trials** have yet reported on the effectiveness of baricitinib for COVID-19.

- Baricitinib has been identified as a potential treatment for COVID-19 using artificial intelligence [2]
- **There is one pilot study (see box, right)**
- There are a few non-trial publications (e.g. letters) discussing its appropriateness as a treatment [3, 4], including one that argues against it [5]

## Ongoing Trials

A number of ongoing clinical trials list baricitinib as a treatment of interest.

# ongoing trials as of June 17, 2020

16

[Link to ongoing baricitinib trial abstracts in Epistemonikos](#)

American pharmaceutical company Eli Lilly began a high-profile phase 3 trial of baricitinib on June 15, 2020. [link]

## STUDY SPOTLIGHT

Cantini F, Niccoli L, Matarrese D, Nicastrì E, Stobbione P, Goletti D. **Baricitinib therapy in COVID-19: A pilot study on safety and clinical impact.** J Infect. 2020 Apr 23. doi: 10.1016/j.jinf.2020.04.017. [link]

### Summary

- Pilot study
- Site: Azienda-USL Toscana Centro (Italy)
- Enrollment March 16-30, 2020
- 12 patients enrolled (10 male, 2 female); median age 63.5
- Treatment: 2 weeks with baricitinib tablets 4 mg/day added to standard ritonavir-lopinavir therapy
- Control: last consecutive patients with moderate COVID-19 pneumonia receiving standard (lopinavir/ritonavir tablets 250 mg/bid and hydroxychloroquine 400 mg/day/orally for 2 weeks) admitted before the date of the first baricitinib-treated patient

### Conclusions

- **Confirmed safety of baricitinib in this clinical context**
- Fever, peripheral capillary oxygen saturation, ratio of arterial oxygen partial pressure to fractional inspired oxygen, C-reactive protein, and Modified Early Warning Score significantly improved in the baricitinib-treated group compared with controls
- ICU transfer was requested in 33% of controls and in none of the baricitinib-treated patients
- Discharge at week 2 occurred in 58% of the baricitinib-treated patients vs 8% of controls; 57% had negative viral nasal/oral swabs at discharge

## Search Methods

### MEDLINE

Date searched: 2020-06-16

Search string: (baricitinib or olumiant or baricinix).ti,ab,kw,kf.

COVID-19 filter: MEDLINE built-in

Major journals filter: (cmaj or jama or n engl j med or lancet or science or nature or bmj or ann intern med or plos one).ja.

### Epistemonikos

Manual search for baricitinib (2020-06-16)

## References

1. Jorgensen SCJ, Tse CLY, Burry L, Dresser LD. Baricitinib: A review of pharmacology, safety and emerging clinical experience in COVID-19. *Pharmacotherapy*. 2020 Jun 15. doi: 10.1002/phar.2438. [[link](#)]
2. Stebbing J, Krishnan V, de Bono S, et al. Mechanism of baricitinib supports artificial intelligence-predicted testing in COVID-19 patients. *EMBO Mol Med*. 2020. [[link](#)]
3. Richardson P, Griffin I, Tucker C, Smith D, Oechsle O, Phelan A, Stebbing J. Baricitinib as potential treatment for 2019-nCoV acute respiratory disease. *Lancet*. 2020 Feb 15;395(10223):e30-e31. doi: 10.1016/S0140-6736(20)30304-4. [[link](#)]
4. Seif F, Aazami H, Khoshmirsafa M, et al. JAK Inhibition as a New Treatment Strategy for Patients with COVID-19. *Int Arch Allergy Immunol*. 2020;181(6):467-475. doi:10.1159/000508247 [[link](#)]
5. Praveen D, Puvvada RC, M VA. Janus kinase inhibitor baricitinib is not an ideal option for management of COVID-19. *Int J Antimicrob Agents*. 2020 May;55(5):105967. doi: 10.1016/j.ijantimicag.2020.105967. [[link](#)]

***Please note: This summary is not being kept up to date, and reflects evidence up to and including June 17, 2020 only.***