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Question: Should Interferon β -1a vs Standard treatment be used for COVID-19 patients?

Setting: Inpatient

| Certainty assessment | | | | | | | № of patients | | Effect | | Certainty |
|----------------------|--------------|--------------|---------------|--------------|-------------|----------------------|------------------------|--------------------|-------------------|-------------------|-----------|
| № of studies | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Interferon β -1a | Standard treatment | Relative (95% CI) | Absolute (95% CI) | |

All-cause Mortality

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|----------------------|-------------------|----------------------|---------------------------|-------------|-------------|------|------------------|------------------|----------------------------------|---|------------------|
| 4 ^{1,2,3,4} | randomised trials | serious ^a | very serious ^b | not serious | not serious | none | 255/2164 (11.8%) | 245/2166 (11.3%) | RR 0.63 (0.31 to 1.29) | 42 fewer per 1.000 (from 78 fewer to 33 more) | ⊕○○○ VERY LOW |
|----------------------|-------------------|----------------------|---------------------------|-------------|-------------|------|------------------|------------------|----------------------------------|---|------------------|

All-cause Mortality mild / moderate ill patients

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| 1 ¹ | randomised trials | serious ^c | not serious | not serious | not serious | none | 10/482 (2.1%) | 13/490 (2.7%) | RR 0.78 (0.35 to 1.77) | 6 more per 1.000 (from 17 fewer to 20 more) | ⊕⊕⊕○ MODERATE |
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All-cause Mortality severe ill patients

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| 1 ¹ | randomised trials | serious ^c | not serious | not serious | not serious | none | 178/1429 (12.5%) | 163/1430 (11.4%) | RR 1.09 (0.90 to 1.33) | 10 more per 1.000 (from 11 fewer to 38 more) | ⊕⊕⊕○ MODERATE |
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All-cause Mortality critically ill patients

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| 1 ¹ | randomised trials | serious ^c | not serious | not serious | not serious | none | 55/139 (39.6%) | 40/130 (30.8%) | RR 1.29 (0.92 to 1.79) | 89 more per 1.000 (from 25 fewer to 243 more) | ⊕⊕⊕○ MODERATE |
|----------------|-------------------|----------------------|-------------|-------------|-------------|------|----------------|----------------|----------------------------------|---|------------------|

Number discharged

| Certainty assessment | | | | | | | № of patients | | Effect | | Certainty |
|----------------------|-------------------|----------------------|---------------|--------------|-------------|----------------------|------------------------|--------------------|------------------------|---|---------------|
| № of studies | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Interferon β -1a | Standard treatment | Relative (95% CI) | Absolute (95% CI) | |
| 2 ^{2,3} | randomised trials | serious ^d | not serious | not serious | not serious | none | 70/94 (74.5%) | 59/96 (61.5%) | RR 1.19 (0.98 to 1.43) | 117 more per 1.000 (from 12 more to 264 more) | ⊕⊕⊕○ MODERATE |

Number of patients with any adverse events

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|------------------|-------------------|----------------------|---------------------------|-------------|----------------------|------|---------------|---------------|-------------------------|---|---------------|
| 2 ^{2,3} | randomised trials | serious ^d | very serious ^e | not serious | serious ^f | none | 40/94 (42.6%) | 31/96 (32.3%) | RR 3.14 (0.13 to 78.69) | 691 more per 1.000 (from 281 fewer to 1.000 more) | ⊕○○○ VERY LOW |
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Number of patients with severe adverse events

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|----------------|-------------------|-------------|-------------|-------------|----------------------|------|--------------|---------------|------------------------|---|---------------|
| 1 ³ | randomised trials | not serious | not serious | not serious | serious ^g | none | 7/48 (14.6%) | 14/50 (28.0%) | RR 0.52 (0.23 to 1.18) | 134 fewer per 1.000 (from 216 fewer to 50 more) | ⊕⊕⊕○ MODERATE |
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Length of stay in intensive care

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| 1 ² | randomised trials | very serious ^h | not serious | not serious | serious ^g | none | 46 | 46 | - | SMD 0.1 lower (0.51 lower to 0.31 higher) | ⊕○○○ VERY LOW |
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Length of stay in hospital (mean days)

| Certainty assessment | | | | | | | № of patients | | Effect | | Certainty |
|----------------------|-------------------|---------------------------|---------------|--------------|----------------------|----------------------|------------------------|--------------------|-------------------|--|------------------|
| № of studies | Study design | Risk of bias | Inconsistency | Indirectness | Imprecision | Other considerations | Interferon β -1a | Standard treatment | Relative (95% CI) | Absolute (95% CI) | |
| 1 ² | randomised trials | very serious ^h | not serious | not serious | serious ^g | none | 46 | 46 | - | SMD 0.32 higher (0.09 lower to 0.73 higher) | ⊕○○○ VERY LOW |

Length of stay in hospital

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|----------------|-------------------|-------------|-------------|-------------|----------------------|------|---|--|--|------------------|
| 1 ³ | randomised trials | not serious | not serious | not serious | serious ^g | none | Tendency to a shorter duration of hospitalization in favour of Interferon beta 1a but not gaining statistical significance HR: 1.37 (0.85-2.20) p = 0.196 | | | ⊕⊕⊕○ MODERATE |
|----------------|-------------------|-------------|-------------|-------------|----------------------|------|---|--|--|------------------|

Progression of COVID-19 disease severity

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|----------------|-------------------|----------------------|-------------|-------------|-------------|------|------------------|------------------|-------------------------------|---|------------------|
| 1 ¹ | randomised trials | serious ^c | not serious | not serious | not serious | none | 209/1911 (10.9%) | 210/1920 (10.9%) | RR 1.00 (0.83 to 1.20) | 0 fewer per 1.000 (from 19 fewer to 22 more) | ⊕⊕⊕○ MODERATE |
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Explanations

- Downgraded of one level for high risk of performance bias in two studies, high risk of attrition bias in one study, unclear risk of selection bias in two studies, and unclear risk of reporting bias in one study
- Downgraded of two levels for high heterogeneity: $I^2=71\%$
- Downgraded of one level for high risk of performance bias
- Downgraded of one level for high risk of performance and attrition bias and unclear risk of selection and reporting bias in one study
- Downgraded of two levels for high heterogeneity: $I^2=90\%$
- Downgraded of one level for wide confidence interval
- Downgraded of one level for small sample size
- Downgraded of two levels for high risk of performance and attrition bias and unclear risk of selection and reporting bias

References

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