**Supplementary Table S1.** Database search strategy.

| Database | Search terms |
|---|---|
| Pubmed | ("intravenous fluids"[Title/Abstract] OR "parenteral fluids"[Title/Abstract] OR "IV fluids"[Title/Abstract] OR "fluid infusion"[Title/Abstract] OR "fluid administration"[Title/Abstract] OR "fluid therapy"[Title/Abstract] OR "fluid perfusion"[Title/Abstract] OR "intravenous rehydration"[Title/Abstract] OR "parenteral rehydration"[Title/Abstract]) AND ("hospitalised patients"[Title/Abstract] OR "hospitalisation"[Title/Abstract] OR "in hospital"[Title/Abstract]) |
| Embase (searched via OVID) | Title and abstract: ((intravenous fluids or parenteral fluids or IV fluids or fluid infusion or fluid administration or fluid therapy or fluid perfusion or intravenous rehydration or parenteral rehydration) and (hospitalised patients or hospitalisation or in hospital)) |
| Web of Science | "intravenous fluids" OR "parenteral fluids" OR "IV fluids" OR "fluid infusion" OR "fluid administration" OR "fluid therapy" OR "fluid perfusion" OR "intravenous rehydration" OR "parenteral rehydration" AND "hospitalised patients" OR "hospitalisation" OR "in hospital" |
| Scopus | Title, abstract and keyword: ("intravenous fluids" OR "parenteral fluids" OR "IV fluids" OR "fluid infusion" OR "fluid administration" OR "fluid therapy" OR "fluid perfusion" OR "intravenous rehydration" OR "parenteral rehydration") AND ABS ("hospitalised patients" OR "hospitalisation" OR "in hospital") |

**Supplementary Table S2.** Risk of bias in cohort studies

| Author | Q1 | Q2 | Q3 | Q4 | Q5a | Q5b | Q6a | Q6b | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Overall |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fikrie, Alemayehu and Gebremedhin, 2019 | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | N | Y | Y | Good |
| Freedman et al., 2014 | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Good |
| Janet el al., 2015 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Lopez-Medina et al., 2012 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Moineau and Newman, 1990 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Oakley et al., 2016 | Y | Y | Y | Y | N | N | Y | N | Y | N | Y | N | Y | Y | Fair |
| Redondo-Gonzalez et al., 2016 | Y | Y | Y | Y | Y | Y | Y | N | Y | Y | Y | N | Y | Y | Fair |
| Tewari et al., 2018 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Thronaes et al., 2021 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Tseng et al., 2018 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |

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| Study | Q1 | Q2 | Q3 | Q4 | Q5a | Q5b | Q6a | Q6b | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Overall |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Waisbourd-Zinman et al., 2008 | Y | Y | Y | Y | N | N | Y | Y | Y | N | Y | N | Y | Y | Fair |
| Wathen, MacKenzie and Bothner, 2004 | Y | Y | Y | Y | N | N | Y | N | Y | N | Y | N | Y | Y | Fair |

Q1: Did the study address a clearly focused issue? Q2: Was the cohort recruited in an acceptable way? Q3: Was the exposure accurately measured to minimise bias? Q4: Was the outcome accurately measured to minimise bias? Q5a: Have the authors identified all important confounding factors? Q5b: Have they taken account of the confounding factors in the design and/or analysis? Q6a: Was the follow up of subjects complete enough? Q6b: Was the follow up of subjects long enough? Q7: What are the results of this study? Q8: How precise are the results? Q9: Do you believe the results? Q10: Can the results be applied to the local population? Q11: Do the results of this study fit with other available evidence? Q12: What are the implications of this study for practice? Y, yes; N, no; CT, cannot tell; NA, not applicable.

**Supplementary Table S3.** Risk of bias in cross sectional studies

| Author | Q1 | Q2 | Q3 | Q4 | Q5a | Q5b | Q6a | Q6b | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | Overall |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Abdul-Mumin, Ervin and Halvorson, 2019 | Y | Y | Y | Y | Y | Y | NA | NA | Y | N | Y | N | Y | Y | Good |
| Akech et al., 2018 | Y | Y | Y | Y | Y | Y | NA | NA | Y | N | Y | N | Y | Y | Good |
| Ben- Shalom, Toker and Schwartz, 2016 | Y | Y | Y | Y | Y | Y | NA | NA | Y | N | Y | N | Y | Y | Good |
| Blacklock et al., 2015 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Chow et al., 2009 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Dbaibo et al., 2013 | Y | Y | Y | Y | N | N | NA | NA | Y | Y | Y | N | Y | Y | Fair |
| Heyman et al., 1990 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Kao et al., 2019 | Y | Y | Y | Y | Y | Y | NA | NA | Y | N | Y | N | Y | Y | Good |
| Machado et al., 2015 | Y | Y | Y | Y | Y | Y | NA | NA | Y | N | Y | N | Y | Y | Good |

| | Q1 | Q2 | Q3 | Q4 | Q5a | Q5b | Q6a | Q6b | Q7 | Q8 | Q9 | Q10 | Q11 | Q12 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marra et al., 2011 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Myat et al., 2021 | Y | Y | Y | Y | N | N | NA | NA | Y | Y | Y | N | Y | Y | Fair |
| Nazurdinov et al., 2018 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Patwari et al., 1991 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |
| Perl et al., 2011 | Y | Y | Y | Y | Y | Y | NA | NA | Y | Y | Y | N | Y | Y | Good |
| Spiller et al., 2009 | Y | Y | Y | Y | N | N | NA | NA | Y | Y | Y | N | Y | Y | Fair |
| Tafsir Hasan et al., 2021 | Y | Y | Y | Y | Y | Y | NA | NA | Y | Y | Y | N | Y | Y | Good |
| Wildi-Runge et al., 2009 | Y | Y | Y | Y | N | N | NA | NA | Y | N | Y | N | Y | Y | Fair |

Q1: Did the study address a clearly focused issue? Q2: Was the cohort recruited in an acceptable way? Q3: Was the exposure accurately measured to minimise bias? Q4: Was the outcome accu-rately measured to minimise bias? Q5a: Have the authors identified all important confounding factors? Q5b: Have they taken account of the confounding factors in the design and/or analysis? Q6a: Was the follow up of subjects complete enough? Q6b: Was the follow up of subjects long enough? Q7: What are the results of this study? Q8: How precise are the results? Q9: Do you believe the results? Q10: Can the results be applied to the local population? Q11: Do the results of this study fit with other available evidence? Q12: What are the implications of this study for practice? Y, yes; N, no; CT, cannot tell; NA, not applicable.