Characteristics and outcomes of pregnant women admitted to hospital with confirmed SARS-CoV-2 infection in UK

Knight M, Bunch K, Vousden N, et al; on behalf of the UK Obstetric Surveillance System SARS-CoV-2 Infection in Pregnancy Collaborative Group

Cite this as: BMJ 2020;369:m2107
Find this at: http://dx.doi.org/10.1136/bmj.m2107

Study question What are the characteristics, management, and outcomes of pregnant women admitted to hospital with confirmed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and their infants?

Methods A prospective national cohort study was carried out in all 194 obstetric units in the UK between 1 March 2020 and 14 April 2020. Information on characteristics, management, and outcomes of pregnant women admitted with confirmed SARS-CoV-2 infection was collected. The main outcomes assessed were rates of maternal hospital admission, maternal death, critical care unit admission, infant infection, and neonatal unit admission.

Study answer and limitations 427 women (5/1000 giving birth) were admitted to hospital with SARS-CoV-2 infection in pregnancy, of whom 41 (10%) needed respiratory support in a critical care setting and five (1%) died. Most women admitted (n=402; 94%) were in the late second or third trimester of pregnancy. 12 (5%) of 265 liveborn infants tested positive for SARS-CoV-2 RNA, six of them within the first 12 hours after birth. This report was produced at a time when active transmission of SARS-CoV-2 was still occurring, and complete pregnancy outcomes were not yet known for women who were admitted but subsequently discharged well, and for some women who were still inpatients.

What this study adds Most pregnant women with SARS-CoV-2 infection did not have severe illness, and most were admitted in the third trimester of pregnancy. Transmission of SARS-CoV-2 to infants of infected mothers might occur but is uncommon.

Pregnancy and infant outcomes among pregnant women admitted to hospital with confirmed SARS-CoV-2 infection

<table>
<thead>
<tr>
<th>Pregnancy outcomes</th>
<th>No (%) of women (n=427)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ongoing pregnancy</td>
<td>161 (38)</td>
</tr>
<tr>
<td>Pregnancy completed</td>
<td>266 (62)</td>
</tr>
<tr>
<td>Pregnancy loss</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Stillbirth</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Live birth (including six women who gave birth to twins)</td>
<td>259/266 (97)</td>
</tr>
<tr>
<td>Neonatal death</td>
<td>2/265 (1)</td>
</tr>
<tr>
<td>Gestation at end of pregnancy (weeks):</td>
<td></td>
</tr>
<tr>
<td>&lt;22</td>
<td>4/266 (2)</td>
</tr>
<tr>
<td>22-31</td>
<td>23/266 (9)</td>
</tr>
<tr>
<td>32-36</td>
<td>43/266 (17)</td>
</tr>
<tr>
<td>≥37</td>
<td>196/266 (73)</td>
</tr>
</tbody>
</table>
Reducing polypharmacy in older people

**ORIGINAL RESEARCH** Cluster randomised controlled trial

**Use of an electronic decision support tool to reduce polypharmacy in elderly people with chronic diseases**

Rieckert A, Reeves D, Altiner A, et al

![Kaplan-Meier survival plot of time to death or first unplanned hospital admission for participants assigned to an electronic decision support tool or treatment as usual (control group). Results from intention-to-treat analysis](image)

**Study question** What are the effects of using an electronic decision support tool for comprehensive drug review of polypharmacy in elderly people with chronic diseases?

**Methods** This was a two year multicentre, cluster randomised controlled trial in 359 general practices in Austria, Germany, Italy, and the United Kingdom. General practitioners recruited patients aged 75 and older who used eight or more drugs regularly. The intervention consisted of a computerised decision support tool to facilitate deprescribing. Doctors in the control group provided treatment as usual. The primary endpoint was a composite of unplanned hospital admission or death. The key secondary endpoint was the number of drugs taken by each participant.

**Study answer and limitations** 3904 participants were enrolled: 1951 received treatment as usual and 1953 the electronic decision support intervention. The primary outcome occurred in 871 (44.6%) participants in the intervention group and 944 (48.4%) in the control group. In an intention-to-treat analysis the odds ratio of the composite outcome was 0.88 (95% confidence interval 0.73 to 1.07; P=0.19, 997 of 1953 v 1055 of 1951). In an analysis

**COMMENTARY** Computerised tools can help but rational prescribing depends on real collaboration

Inappropriate medication use and polypharmacy is widespread yet continues to receive precious little attention.1,2

In this issue, Rieckert and colleagues present the results of a large trial in primary care evaluating a computerised tool providing individualised evidence based recommendations on deprescribing.3 Use of this tool for patients aged 75 and older who were taking at least eight drugs resulted in a reduction of 0.42 drugs per patient and a modest risk reduction in mortality and admission to hospital. Although the intervention had no effect on other clinical outcomes or quality of life, it was safe and non-inferior to treatment as usual. The PRIMA-eDS tool is an evolution of simple lists and criteria for drugs to avoid and joins other deprescribing strategies in showing modest reductions in inappropriate medication use and polypharmacy, with minor improvements in clinical outcomes.4

**Bigger picture** Lists and criteria for drugs to avoid, regardless of their sophistication, have not led to optimal prescribing when used alone.5 These strategies seem to have missed the bigger picture, perhaps because they derive from a guideline based worldview in turn based on a single disease model, which posits that patients are largely homogeneous.6

This is incongruent with the reality of older populations, where heterogeneity is the norm and where there is no longer such a thing as a natural clinical course of disease, owing to inseparable co-mingling of multiple diseases with multiple drugs.7,8

We must not neglect the other two pillars of evidence based medicine: clinical expertise and patient values9

The range of appropriate drugs contracts substantially.7,8

**Vicious cycle** Geriatric palliative concepts such as these are systematically neglected by healthcare systems, which fuel vicious cycles of overdiagnosis leading to inappropriate prescribing.10 The number of clinicians caring for a patient multiplies along with the drugs they prescribe, each specialist being primarily concerned with treating the disease for which he or she is responsible. The result is a diffusion of responsibility. Although all players take solace in the immutable truth of up to date guidelines, the unaddressed knowledge gap remains. In the absence of adequate research evidence, however, we must not
restricted to participants attending the practice according to protocol, a difference was found favouring the intervention (odds ratio 0.82, 95% confidence interval 0.68 to 0.98; 774 of 1682 v 873 of 1712, P=0.03). By 24 months the number of prescribed drugs had decreased in the intervention group compared with the control group (uncontrolled mean change −0.42 v 0.06; adjusted mean difference −0.45, 95% confidence interval −0.63 to −0.26; P<0.001). The pragmatic nature of the trial resulted in the decision support tool not always being used as intended, thus reducing its potential effectiveness.

What this study adds A computerised decision support tool had no conclusive effects on the composite of unplanned admission to hospital or death in intention-to-treat analysis, but more intensive usage, according to the results of the per protocol analysis, might have beneficial effects. A reduction in drugs was achieved without detriment to patient outcomes.

Funding, competing interests, and data sharing This study was funded by the seventh Framework Programme of the European Union, theme Health-2012-Innovation-1-2.2.2-2 (grant agreement No 305388-2).

IK is employed by Duodecim, which sells the EBMeDS (evidence based medicine electronic decision support decision support) service that was used for the electronic decision support tool. Trial data will be provided on reasonable request.

Trial registration Current Controlled Trials ISRCTN10137559.
	neglect the other two pillars of evidence based medicine: clinical expertise and patient values. Barriers to deprescribing include deficiencies in medical education, the practise of defensive medicine, and systematic influence from the pharmaceutical industry. But there is cause for optimism, as some groups report greater receptiveness on the part of doctors and patients to deprescribing, especially when educated on the matter in diverse contexts.

Evidence is accumulating that the most powerful strategy to combat inappropriate drug use and polypharmacy is poly-deprescribing, the cessation of as many non-life-saving drugs as possible, while emphasising patient and family autonomy through a high degree of collaboration.

Societies should be measured by the way their most vulnerable citizens are treated. Similar to the international effort required to deal with an epidemic, the International Group for Reducing Inappropriate Medication Use and Polypharmacy (IGRIMUP) was founded to combat the iatrogenic epidemic of inappropriate medication use and polypharmacy.

Our group has published comprehensive action recommendations for policy, research, and education. In this way, we hope to raise awareness about, and ultimately correct, misguided approaches in modern medicine that are causing adverse health outcomes for countless older people.
Academic criteria for promotion and tenure in biomedical sciences faculties

Rice DB, Raffoul H, Ioannidis JPA, Moher D

Cite this as: BMJ 2020;369:m2081
Find this at: http://dx.doi.org/10.1136/bmj.m2081

Study question What is the proportion of traditional (for example, number of publications) and non-traditional criteria (for example, data sharing) present in promotion and tenure guidelines?

Methods This cross sectional study considered 170 randomly selected universities from the Leiden ranking of world universities list for inclusion. Two reviewers searched for guidelines applied when scientists are assessed for promotion and tenure among institutions with biomedical faculties. Where faculty level guidelines were not available, institution level guidelines were sought. Available documents were reviewed, and the presence of traditional and non-traditional criteria was noted in guidelines for assessing assistant professors, associate professors, professors, and the granting of tenure.

Study answer and limitations Across countries, institutions with faculties of biomedicine or health sciences (n=92) focused on rewarding traditional research criteria (peer reviewed publications (n=87; 95%), authorship order (34; 37%), journal impact (26; 28%), grant funding (62; 67%), and national or international reputation (64; 48%)) as opposed to non-traditional criteria (for example, data sharing (1; 1%)). Three criteria (publishing in open access mediums, registering research, and adhering to reporting guidelines) were not found in any guidelines reviewed. Substantial variability existed across continents as to whether any guidelines were available, with a substantial rate of non-response from specific regions.

What this study adds The evaluation of scientists described in biomedical faculties’ promotion and tenure guidelines emphasises traditional criteria as opposed to non-traditional criteria. This might reinforce research practices that are known to be problematic while insufficiently supporting the conduct of better quality research and open science. Institutions should consider incentivising non-traditional criteria.

Funding, competing interests, and data sharing No funding was received for this work. The authors declare no competing interests. All data associated with this study are posted on the Open Science Framework (https://osf.io/26ucp/?view_only=b80d2bc7416543639f577c1b8756e44).

Study registration Open Science Framework (https://osf.io/26ucp/?view_only=b80d2bc7416543639f577c1b8756e44).

The BMJ is an Open Access journal. We set no word limits on BMJ research articles but they are abridged for print. The full text of each BMJ research article is freely available on bmj.com. The online version is published along with peer and patient reviews for the paper, and a statement about how the authors will share data from their study. It also includes a description of whether and how patients were included in the design or reporting of the research. The linked commentaries in this section appear on bmj.com as editorials. Use the citation given at the end of commentaries to cite an article or find it online.