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# The ability of the neonatal immune response to handle SARS-CoV-2 infection

## Authors' reply

We thank Florian Götzinger and colleagues for their Correspondence. The additional analysis they report is welcome, and the points they raise in relation to this new disease and its severity are important.

The 66 cases of neonatal severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection we describe were identified through prospective, national, active surveillance, with comprehensive linkage to national testing and other national data sources to ensure maximal case ascertainment.[1] Hence, we report population-based incidence data, which is in contrast with registry data, where the proportion of cases ascertained and denominator are uncertain.

In the study design we prespecified analysis of disease severity using the only published severity grading for paediatric SARS-CoV-2 infection.[2] This definition was difficult to apply and we agree with Götzinger and colleagues that this definition might not accurately reflect severe disease in the neonatal period. For these reasons we presented data on other objective markers of disease severity, such as receipt of respiratory support. As we discussed, other conditions such as preterm birth are common and might require respiratory support or critical care independent of SARS-CoV-2 infection. However, in our study population, 17 (35%) of 48 term-born babies with SARS-CoV-2 infection received some form of respiratory support, two (4%) of whom received mechanical ventilation. Although we presented data on neonates who received treatment that was targeted at SARS-CoV-2, we do not feel that receipt of treatments targeting SARS-CoV-2 is a useful marker of disease severity. The decision to use experimental drugs with unknown efficacy and side-effects is influenced by multiple factors in addition to disease severity.

We disagree that our concluding statement that "inpatient admission in neonates with SARS-CoV-2 infection is rare and most babies are only mildly affected in the neonatal period" is contradicted by our data. Over our study period an estimated 118 347 livebirths occurred and only 66 were in hospital with SARS-CoV-2 infection, strongly supporting the rarity of this disease in the neonatal period. Furthermore, regardless of which markers of severity are used, most babies with SARS-CoV-2 infection did not have severe disease. From our data we are unable to comment on the ability of the neonatal immune response to handle SARS-CoV-2 infection; however. we agree with Götzinger and colleagues that short-term outcomes in this population appear to be good.

The declaration of interests remains the same as in the original Article.

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1 Gale C, Quigley M, Placzek A, et al. Characteristics and outcomes of neonatal SARS-CoV-2 infection in the UK: a prospective national cohort study using active surveillance. *Lancet Child Adolesc Health* 2020; published online Nov 9. https://doi.org/10.1016/S2352-4642(20)30342-4.

2 Dong Y, Mo X, Hu Y, et al. Epidemiology of COVID-19 among children in China. *Pediatrics* 2020; **145:** e20200702.

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