Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

a targeted fashion, the side-effects typically associated with the use of systemic corticosteroids can be avoided, and these medications are generally well tolerated.

However, there is no disease-modifying effect and symptomatic benefit is lost if treatment is withdrawn. Biological therapies are expensive, and health economic modelling suggests that a surgical strategy is superior in terms of cost-effectiveness.

What must now follow are head-to-head comparisons of these novel therapies with surgery and ongoing medical therapy to allow their optimum place in the treatment paradigm to be better defined. Such studies will need to consider both clinical and cost-effectiveness with long-term follow-up.

For now, this important study supports the role of surgery in the management of what is primarily an inflammatory condition. Like all good studies, it also highlights the shortcomings of current treatment options and helps to direct future research for a common, chronic, and debilitating disease. However, while many surgeons will read this study and breathe a small sigh of relief that they can continue to offer sinus surgery, I am left with an over-riding feeling that we must seek to do better for our patients.

I am a member of advisory boards for Sanofi, GSK, and AstraZeneca, and have received speaker fees from Olympus, Intersect, and Meda.

Claire Hopkins
claire.hopkins@gstt.nhs.uk

Ear, Nose, and Throat Department, Guy's Hospital, London, SE1 9RT, UK

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Tracing and vaccinating: how to REACT to COVID-19 pandemic

COVID-19, the disease caused by SARS-CoV-2 infection, is one of the most complex health-related challenges of the past century. Since March 11, 2020, when WHO declared COVID-19 a pandemic,[1] extraordinary progress has been made in understanding the disease's clinical features, pathogenetic mechanisms, and identifying effective containment measures. However, almost 2 years into the pandemic, several questions remain, and SARS-CoV-2 infections and COVID-19 fatality rates remain high worldwide, with the disease incidence peaking in subsequent waves of infections.

All the COVID-19 vaccines approved by the European Medicines Agency and US Food and Drug Administration have effectively reduced the SARS-CoV-2 infection rate and clinical severity of COVID-19 illness, although to different extents. However, the emergence of viral variants, especially delta (B.1.617.2) and, more recently, omicron (B.1.1.529), has resulted in an international effort to understand the efficacy of vaccines (and other developed drugs) on these variants.[2,3]

In this context, efficiently tracing and sequencing SARS-CoV-2 infections is an essential approach to understanding COVID-19 epidemiology, thus applying the most appropriate containment measures.

The REal-time Assessment of Community Transmission-1 (REACT-1) study has been developed in England, a country with one of the highest rates of confirmed COVID-19-associated mortality globally.[4] Since May, 2020, the REACT-1 study has conducted a series of random cross-sectional surveys in the general population in England (aged ≥5 years) with the aim of epidemiologically characterising the evolution of


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the COVID-19 pandemic. In particular, the study has estimated the changing community-based prevalence of SARS-CoV-2, transmission dynamics, and, more recently, vaccine effectiveness against infection.[5] In *The Lancet Respiratory Medicine*, Marc Chadeau-Hyam and colleagues[6] report the results of round 14 of REACT-1 (run from Sept 9 to 27, 2021) and provide some crucial findings. Notably, to fully understand the study results, it is essential to know that the vaccination programme in England was expanded since April, 2021, to include adults younger than 50 years, and that a single vaccine dose was offered to children aged 16–17 years from August, 2021, and to children aged 12–15 years from mid-September, 2021.

Chadeau-Hyam and colleagues found an increasing prevalence of SARS-CoV-2 infections among school-aged children (ie, aged 5–17 years) in England in September, 2021, coinciding with the increased social interactions for the autumn school term. These findings contrast with what has been observed in adults, for whom a decreasing prevalence was reported in the same period,[6] probably reflecting the effects of previous natural infections and vaccines. The increase in paediatric cases, a group in which vaccination rates are low, needs to be taken into serious consideration. Although paediatric COVID-19 is usually mild,[7] severe cases have been reported. Additionally, multisystem inflammatory syndrome in children (MIS-C) is a rare but severe concern for children with SARS-CoV-2 infection.[8] Nonetheless, the intense circulation of SARS-CoV-2 among children will continue to promote substantial spreading of the virus in the community, representing a risk for susceptible individuals who might not respond to COVID-19 vaccines—eg, immunocompromised individuals.

Another crucial finding reported here regards vaccine effectiveness. Combining data from the study rounds 13 (run from June to July, 2021) and 14, the estimate of vaccine effectiveness against infection was 63% in adults after two doses compared with those who were unvaccinated. Notably, breakthrough infections in vaccinated adults occurred more frequently after 3 months following two vaccine doses. Moreover, all the sequenced swabs taken during testing were positive for the delta variant, confirming that this variant had almost completely replaced all other variants in England at this time.

Overall, these results are highly informative and should guide decisions to tackle the COVID-19 pandemic. First, a third booster vaccination is recommended after two doses of vaccine to restore protection against SARS-CoV-2 infection. Second, children need to be vaccinated to protect them from severe COVID-19 and MIS-C,[9] and to control the spread of COVID-19 in the community. Third, the REACT-1 study clearly shows the importance of tracing infections to understand the epidemiological evolution of the pandemic, which is even more important now that we are facing the challenge of the omicron variant.[4] Although encouraging results have been reported on the effective in-vitro neutralisation of SARS-CoV-2 omicron infection with serum samples from people who have received a booster vaccination,[10] real-world data are urgently needed. Indeed, the future rounds of the REACT-1 study will be highly informative to answer the unanswered questions and fully understand the effect of the omicron variant and guide appropriate health policies.

We declare no competing interests.

*Riccardo Castagnoli, *Gian Luigi Marseglia*
gl.marseglia@smatteo.pv.it

Pediatric Clinic, Fondazione IRCCS Policlinico San Matteo, University of Pavia, 27100 Pavia, Italy; Department of Clinical, Surgical, Diagnostic and Pediatric Sciences, University of Pavia, Pavia, Italy

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