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Highlights...

Our page 1 stories look at the effect of the pandemic and lockdown on children with chronic illnesses, and at early response rates to two different antipsychotics as clinicians try to avoid unnecessary exposure to side effects.

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Pandemic

The impact of the COVID-19 pandemic on pediatric chronic illness groups

By Beth A. Logan, Ph.D.

The COVID-19 pandemic has had profound impacts on children and families, with widescale disruptions in many aspects of individual, family, school, and peer functioning. For children and adolescents, the pandemic has contributed to increased prevalence of depression, anxiety, eating disorders, and suicidality, particularly among adolescents.

In addition, the pandemic has had impacts on parental mental health and family functioning. A recent study by Patrick and colleagues (2020) found that one in four parents reported worsening mental health, and one in 10 parents endorsed worsening of both their own mental health and their child's mental health. Among families with both worsening parental and child symptoms, nearly half (47.6%) lost childcare and 11% experienced food insecurity.

For children with chronic illnesses, the pandemic has presented unique challenges and opportunities. We will discuss individual-, family-, and systems-level factors contributing to the impact of the pandemic on chronically ill children and families and review the differential impact on two pediatric illness groups: children

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First episode psychosis

Aripiprazole versus quetiapine: Response/non-response can be predicted at 2–4 weeks

By Alison Knopf

Early results from a study looking at antipsychotic non-response in early treatment of first episode psychosis suggested that switching from extended-release quetiapine to aripiprazole, or from aripiprazole to extended-release quetiapine, should be considered. In general, patients who respond to antipsychotics tend to do so in the first few weeks, but when a patient should be considered a non-responder in terms of trying a different medication is still in question. Clinicians and researchers alike hope that exposure to ineffective treatments can be shortened by exploring whether early non-response can predict non-response later on, and also whether it can prevent non-remission.

Approximately one-quarter of adolescents who have a first episode psychosis develop schizophrenia before age 18. Adolescents with psychosis can face years of treatment, and pharmacotherapy is an important modality. Yet, because of side effects, antipsychotics should be given to adolescents with caution.

For a study published in a recent issue of the *Journal of the American Academy of Child and Adolescent Psychiatry*, researchers wanted to address the predictive value of antipsychotic early response and non-response for future remission and non-remission for adolescents with a first episode of a broad spectrum of psychosis. They wanted to compare their results to those from the Positive and Negative Syndrome Scale (PANSS)-30. They hypothesized that in adolescents with

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Pandemic

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with asthma and solid organ transplant (SOT) recipients.

Impact on pediatric populations

Individual-level factors: At baseline, children with chronic illness are at increased risk for anxiety, depression, attention difficulties, and learning problems. Depending on the pediatric population, this risk is often due to a combination of the severity, progression, and treatment of their disease, as well as chronic stress related to disease burden. Children with chronic illness have experienced increased anxiety about their morbidity and mortality associated with COVID-19 infection.

Family-level factors: For families, the pandemic has been associated with higher rates of stress related to their child's individual health risk and disruptions in work, school schedules, and childcare. Many families have also experienced financial stress, which impacts ability to afford medications and routine healthcare costs. For families of children who are immunocompromised or at an increased risk of severe illness from a COVID-19 infection, family-level decisions around mask wearing and school attendance have been confounded by disease-specific factors.

System-level factors: Adherence to daily medications and health regimens in children are promoted by a network of social support individuals at home, schools, and healthcare settings. To curb the spread of infection, many schools adopted virtual learning measures for part or all of 2020. Schools provide important supports for children with chronic illnesses, including respite for parents, nursing support, routine, learning supports, peer socialization, and, for some, mental health supports.

Within the healthcare system, many departments have experienced a decrease in physical appointments, may have stopped accepting new patients, and provide routine care via telephone and video methods. Among some illness groups, supply chain disruptions have impacted medications needed for ongoing care.

For children with chronic illness, these individual-, family-, and system-level factors converge to impact adherence. It is well-established that adherence is negatively impacted by behavioral and emotional problems. The pandemic has been associated with variability in family's daily structure and routines, which likely negatively affects medication-taking routines. The pandemic was also associated with, for many families, a decrease in the availability of caregivers to support health routines; and changes in family members available at home likely resulted in parental over- or under-involvement, each of which can negatively impact adherence (Plevinsky et al., 2020).

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Asthma

Pediatric asthma is a chronic respiratory condition associated with high levels of healthcare utilization. In pediatric populations, asthma is thought to be one of the pre-existing conditions increasing the risk of severe COVID-19.

With respect to changes in healthcare utilization during the pandemic, ED visits in one children's hospital for asthma-related reasons have also dramatically dropped, from a mean of 24.3 visits/day in pre-pandemic years to 5.8 visits/day (Kenyon et al., 2020). Similarly, there has been a decrease in PICU admissions for asthma exacerbations and other respiratory conditions (Zee-Cheng et al., 2021) as determined by review of the Virtual Pediatric Systems database. Asthma rates decreased from 6.6% of PICU admissions in the second quarter of 2019 to 1.8% of PICU admissions in the second quarter of 2020. The improvement in asthma symptoms has been posited to be due in part to environmental changes, such as improvements in air quality and reduced exposure to allergens and seasonal respiratory illnesses, that have been secondary to social distancing measures and mask wearing.

Regarding health outcomes, in an Israeli study of children with respiratory disease, 33% of caregivers reported a decrease in need for reliever medications, particularly among those diagnosed with asthma. Notably, 20% of caregivers reported improved adherence. Similarly, in a separate multi-site survey of asthma care providers, 20% of patients demonstrated control that was better than expected relative to their pre-pandemic symptom trajectory (Papadopoulos et al., 2020).

Caregivers of children with asthma also reported increased anxiety (58%) and perceived their child to be at increased risk for illness (~73%). Caregivers also reported an increase in healthcare utilization by alternative means (i.e., phone, online consultations, email) during the pandemic, particularly among caregivers who rated themselves as having increased anxiety (Cahal et al., 2021).

Solid organ transplant

Pediatric SOT recipients have been characterized as high-risk during the pandemic as a result of their immunosuppressed status secondary to medications needed to prevent graft rejection. Organ recipients are at increased risk for severe illness from common respiratory illnesses, and additional comorbidities associated with their underlying diagnosis may predispose them to additional adverse health outcomes.

With respect to health outcomes, many children awaiting transplant experienced an increase in wait time, placing them at higher risk for waitlist mortality. During the early months of the pandemic, the number of pediatric transplants was down about 10% as compared to 2019, particularly with respect to living donor transplantation (Lobritto et al., 2020). Among those awaiting transplantation, in March of 2020, 72% of pediatric patients were listed as inactive as a result of COVID-19 precautions. As 2020 progressed, this statistic averaged 2%–3% of waitlist inactive patients. In Canada, programs suspended preemptive kidney transplants, resulting in a number of patients needing to start dialysis prior to transplant (Wei Teoh et al., 2020). Also in Canada, elective or

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surveillance biopsies performed to assess for graft rejection were suspended.

The transplant community has leveraged telemedicine to provide pre- and post-transplant care, with 65% of programs completing transplant evaluations via telemedicine, 58% of centers using telemedicine for waitlist management, and the vast majority of centers (98%) providing routine post-transplant care via audio or video mechanisms.

Forner-Puntonet and colleagues (2021) compared families of pediatric solid organ transplant recipients with families of healthy children matched by age and gender. Overall, families in the control group had greater exposure to COVID-19 than transplant recipients, measured by self-report of COVID-19 diagnosis or close contact with a COVID-positive individual. Caregivers of all children in the study reported increased anxiety, mood disturbance, poor sleep, and worse physical health habits. However, caregivers of transplant recipients perceived isolation and infection prevention measures as de-stigmatizing, as many transplant recipients engage in these measures at baseline due to immunocompromised status. Additionally, caregivers of transplant recipients endorsed greater perceived risk to their children of severe illness or death from COVID-19 infection than healthy controls.

Transplant recipients also endorsed fear during the pandemic, with 76% of pediatric patients in one study reporting their liver transplant status or liver transplant medications placed them at increased risk for severe infection, even when compared with another high-risk pediatric sample (patients with IBD; Dorman et al., 2021). Furthermore, half of patients surveyed reported needing emotional support during the pandemic, and 84% reported taking additional infection control measures than were required.

As schools and businesses reopened after initial stay-at-home orders, transplant families were faced with difficult choices around mask wearing and returning to school and work. The transplant community published consensus guidelines surrounding school re-entry for transplant recipients and their healthy siblings (see Downes et al., 2020). The impact of these choices on transplant families was evident in caregiver reports, with SOT recipients being more likely to have a family member required to stop working during the pandemic, in many cases due to caregiving demands not filled by school-based or home healthcare services, or due to virtual schooling options.

Respite childcare programs, caregiver support groups for families of children with chronic illness, and working to mitigate supply needs can lessen the burden on caregivers.

With respect to adherence, young adults who underwent liver transplantation as children are the highest risk group for nonadherence as they transition to adult care. A German cohort of young adults surveyed denied changes in adherence to medications; however, 40% missed follow-up visits or labs during the pandemic, and nearly 70% endorsed feeling fearful to visit physicians as a result of COVID-19 (Kroncke et al., 2021).

Conclusions

The impact of the COVID-19 pandemic on pediatric chronic illness groups requires special consideration and clinical care. Suggestions for providers, offered by Wong et al. (2020), include the ongoing use of telehealth to both deliver services and coach caregivers in the delivery of services in the home. Respite childcare programs, caregiver support groups for families of children with chronic illness, and working to mitigate supply needs can lessen the burden on caregivers. Physical distancing and isolation, which for children with chronic illnesses may persist longer, may exacerbate mental health concerns, and access to behavioral healthcare is essential.

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