

Liver Transplant Following Suicide Attempt by Acetaminophen Overdose in an Adolescent: Developmental Considerations for Managing Psychosocial Risk Factors

Tanner J. Bommersbach, MD, MPH & Alastair J. S. McKean, MD
Department of Psychiatry & Psychology, Mayo Clinic, Rochester, MN

CASE

- 15-year-old female with history of prior suicide attempt, depression, and substance use transferred from outside hospital in acute liver failure one day following 45-gram acetaminophen overdose. Overdose followed argument with father about sneaking out to use alcohol and cannabis with friends. Transplant hepatology consulted and pretransplant evaluation obtained from parents.
- Parents separated for years with father having full physical and legal custody. Due to mother's substance use, removed from her care in early adolescence. At time of overdose, mother one week in recovery from methamphetamines and in residential treatment. Parents rurally located with limited financial resources.
- Psychiatric assessment obtained. At age 11, admitted to pediatric ICU following suicide attempt via acetaminophen overdose.
- 3 months prior to current overdose, father noted worsening behaviors: escalating cannabis use and binge drinking, refusing to attend school and psychotherapy, and nonadherence to SSRI.
- Pre-transplant evaluation yielded conflicting opinions regarding suitability for liver transplant given prior serious suicide attempt, psychiatric instability, treatment nonadherence, family conflict, and substance use.
- Due to complexity and conflicting opinions, medical ethics consulted. Given patient's imminent mortality without transplant, patient was listed and transplant occurred four days after overdose.
- Post-operative course complicated by delirium and catatonia, which responded to lorazepam. Following stabilization, transferred to inpatient psychiatry unit for two weeks.
- Discharged home with father. Followed by county children's mental health case management. Individual psychotherapy and in-home skills worker for family-based interventions arranged. Presently nine months post-transplant, stable, and following up with all scheduled appointments and medications.

OBJECTIVES

- To outline the **ethical considerations** commonly involved in pediatric transplant cases after a suicide attempt.
- To propose a **developmental framework** to evaluate and manage the unique psychosocial risk factors often involved in pediatric transplants post-suicide attempt.

PSYCHOSOCIAL ASSESSMENT

- The psychosocial assessment is an important component of the pretransplant evaluation that aims to identify patient and family risk factors that may impact post-transplant outcomes.
- The psychosocial assessment has not been routinely integrated into pediatric transplant, largely because there is insufficient long-term data about psychosocial risks that would prohibit transplant in a child.
- Yet, an opportunity to intervene on the complex factors involved may be lost without a psychosocial assessment.

ETHICAL CONSIDERATIONS

- Given the lack of data examining long-term outcomes of children who received transplant after a suicide attempt, candidacy decisions rely on ethical principles.
- Prior writing on this topic has established principles:
 - A child's contribution to their illness should not be considered in allocation decisions.
 - A child should not be refused transplant based on high-risk findings in the psychosocial evaluation.
- While this early work has been important for highlighting the ethical imperative at stake, nuanced considerations may be lost when the discussion stops here.
- Therefore, **Table 1** lists additional ethical considerations that must be assessed.

TABLE 1: Ethical Considerations in Pediatric Transplant Decisions Following Suicide Attempt

Principle	
Beneficence	Often assessed in terms of quality of life or number of years lived beyond the transplant, but is this how a child or parent/guardian would view benefit?
Competency	How should children be involved in candidacy decisions for which they will assume responsibility for the rest of their lives? This becomes even more difficult when a child is suicidal and/or lacking capacity.
Autonomy and Consent	How do we weigh the autonomy of a minor for an intervention for which the management will soon be their responsibility? While parents/guardians provide consent, we want the child to assent to treatment.
Justice	How should the clinical team consider justice in situations where beneficence weighs so heavily? Given that organs are an extremely limited resource, justice is often the counterbalancing concern and a driver of moral/ethical distress amongst clinical teams.

TABLE 2: A Developmental Framework to Manage Psychosocial Risk Factors in Children Requiring Transplant

Risk Factor	Child/Adolescent	Parent/Guardian/System
Static	<ul style="list-style-type: none"> History of trauma Prior suicide attempt Prior psychiatric hospitalizations Family history substance use Low intellectual functioning 	<ul style="list-style-type: none"> History of trauma History of substance use Parent divorce/separation History of child protection involvement
Limited Flexibility	<ul style="list-style-type: none"> Poor after school support Limited in-home therapy options Limited access to medical care 	<ul style="list-style-type: none"> Financial insecurity Rural residence and low availability of care Low parental supervision Poor extended family support
Dynamic	<ul style="list-style-type: none"> Psychiatric illness Substance use Poor health literacy Medication nonadherence Poor school attendance Poor self-regulation and distress tolerance 	<ul style="list-style-type: none"> Substance use Medical and psychiatric illness Poor health literacy Limited transportation to medical care Conflict between parents

DISCUSSION

- This case highlights ethical considerations and complex patient and family risk factors that are common in pediatric organ transplant cases after a suicide attempt.
- To help clinicians navigate these cases, we propose a developmental framework (**Table 2**) through which to consider the psychosocial risk factors involved.
- This framework first seeks to separate risk factors that are rooted in the child from factors located in the system.
- The framework then attempts to identify which factors are:
 - Static
 - Dynamic
 - Of limited flexibility

CONCLUSIONS

- This case demonstrates how a developmental framework may help teams navigate the challenging ethical questions that arise when evaluating children for organ transplant after a suicide attempt.
- More research on long-term outcomes of pediatric organ transplant recipients is needed to best determine how psychosocial factors can guide decision-making.

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