

Health Quality Ontario

The provincial advisor on the quality of health care in Ontario

Composite Tissue Transplant of Hand or Arm: OHTAC Recommendation

ONTARIO HEALTH TECHNOLOGY ADVISORY COMMITTEE RECOMMENDATION

- The Ontario Health Technology Advisory Committee recommends against publicly funding composite tissue transplantation for hand or arm

RATIONALE FOR THE RECOMMENDATION

The Ontario Health Technology Advisory Committee (OHTAC) reviewed and accepted the findings of the health technology assessment conducted by Health Quality Ontario.¹

Based on the evidence, the Ontario Health Technology Advisory Committee reached a consensus that there is considerable uncertainty in the clinical benefit of the procedure and because the procedure costs are very high it does not provide good value for money. The committee recognized that improving the certainty in clinical benefit by generating higher-quality evidence is challenging because the number of patients eligible to receive the procedure is very small. The committee also agreed that the individual circumstances of patients may affect the trade-offs of benefits and harms, and the evidence does not capture such unique scenarios.

The Ontario Health Technology Advisory Committee reviewed the public comments received on the draft recommendation. The comments noted the following concerns: the evidence was not generalizable to the Ontario context, the evidence did not capture the unique clinical situations of eligible Ontario patients that may allow the benefits of the procedure to outweigh the risks, there was a lack of societal and ethical values consideration, there was an overestimation of the procedure cost, and patient engagement was not done to inform the recommendation. The committee deliberated on these comments and felt that despite these concerns, the main issues were that the overall clinical benefit of the procedure is uncertain and the costs associated with the procedure are very high.

The Ontario Health Technology Advisory Committee advised that because of the lack of high-quality evidence the procedure should be done in the context of a research study where costs, benefits, and harms could be accurately measured.

Decision Determinants for Composite Tissue Transplant of Hand or Arm

Decision Criteria	Subcriteria	Decision Determinants Considerations
Overall clinical benefit How likely is the health technology/intervention to result in high, moderate, or low overall benefit?	Effectiveness How effective is the health technology/intervention likely to be (taking into account any variability)? Safety How safe is the health technology/intervention likely to be? Burden of illness What is the likely size of the burden of illness pertaining to this health technology/intervention? Need How large is the need for this health technology/intervention?	If a patient has a successful transplant, where acute rejections have been resolved and complications are managed, the patient can have improved function. Surgical complications were rare in the sample examined. However, many complications that occur are due to the lifelong immunosuppressant treatment. The loss of a hand or arm can cause distress, disability, and functional impairment. However, not everyone will be eligible for a transplant. There would likely be a very small number of hand or arm transplants each year in Ontario.
Consistency with expected societal and ethical values^a How likely is adoption of the health technology/intervention to be congruent with societal and ethical values?	Societal values How likely is the adoption of the health technology/intervention to be congruent with expected societal values? Ethical values How likely is the adoption of the health technology/intervention to be congruent with expected ethical values?	Patients with hand or arm amputation may want to undergo a procedure that gives them the potential to have functional improvement in their hand or arm.
Value for money How efficient is the health technology likely to be?	Economic evaluation How efficient is the health technology/intervention likely to be?	Health Quality Ontario's evaluation found that unilateral hand transplant was likely to be much more expensive than standard care (\$735,647 vs. \$61,429, per patient) and also likely to be associated with fewer quality-adjusted life-years (QALYs; composite tissue transplantation 10.96 vs. standard care 11.82) (because of potential harms from immunosuppression if the patient is not already receiving immunosuppression). Compared with standard care, bilateral hand transplant was associated with an incremental cost of \$633,780 and an incremental effectiveness of 0.17 QALYs, translating to an incremental cost-effectiveness ratio of approximately \$3.8 million per QALY gained. For patients already receiving immunosuppression treatment, the ICER for bilateral hand transplant was \$162,426 per QALY gained.

Decision Criteria	Subcriteria	Decision Determinants Considerations
Feasibility of adoption into health system How feasible is it to adopt the health technology/intervention into the Ontario health care system?	Economic feasibility How economically feasible is the health technology/intervention?	Given the small number of patients who would have a hand or arm transplant, the total costs would be moderate. We estimated about \$0.9 million in 2016 to treat 3 adults. In practice, a smaller number of patients may be treated each year.
	Organizational feasibility How organizationally feasible is it to implement the health technology/intervention?	At least two centres in Ontario are prepared to start hand or arm transplantation. These programs include plans to manage donor referral, screening, patient selection, processing, and documentation; tissue offer and retrieval; recipient referral, assessment, selection, wait list management; and transplant procedure, inpatient care, and follow-up.

^aThe anticipated or assumed common ethical and societal values held in regard to the target condition, target population, and/or treatment options. Unless there is evidence from scientific sources to corroborate the true nature of the ethical and societal values, the expected values are considered.

REFERENCE

- (1) Health Quality Ontario. Composite tissue transplant of hand or arm: a health technology assessment. Ont Health Technol Assess Ser [Internet]. 2016 June;16(13):1-70. Available from: <http://www.hqontario.ca/Evidence-to-Improve-Care/Journal-Ontario-Health-Technology-Assessment-Series>.

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