Research Article

Psychosocial Recommendations in Upper Extremity Allotransplantation

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1. Summary

Psychosocial factors are acknowledged as important variables in the outcome of Vascularized Composite Allotransplantation (VCA). After the first international meeting dedicated to psychosocial aspects of VCA, named the Chauvet Workshop, a survey was sent to all teams involved in Upper Extremity Transplantation (UET) to determine which psychiatric conditions were considered absolute versus relative contraindications to UET; which psychosocial domains should be evaluated before and after transplantation, and which instruments to use. The results of the survey were discussed during the second Chauvet workshop (Paris, 2016). Most centers consider risk factors in UET to be relative, and potentially modifiable. Certain psychiatric disorders, unreasonable expectations, a history of non-adherence, relational difficulties with the team, and lack of social support were considered risk factors for a poor outcome. In particular, severe personality disorders, active substance abuse, schizophrenia and unreasonable expectations were considered the risk factors which when co-occurring, may constitute an absolute contraindication to UET. It was recommended that the psychosocial assessment be based on clinical interviews supplemented by structured and validated instruments. Three domains emerged for assessment before and after the transplantation: quality of life, depression, and anxiety. The Patient Health Questionnaire-9, Generalized Anxiety Disorder Scale and Short Form-36 were proposed as instruments to assess UET. Open-ended questions were recommended for use with the patients before and after transplantation.

This represents the first international consensus on psychosocial evaluation and follow-up in UET, however we need to compare pre-transplant risk profiles with post-transplant outcomes to determine the threshold for psychosocial risks.

2. Keywords: Upper extremity allotransplantation; Psychosocial contraindications; Psychosocial evaluation and follow-up

3. Introduction

Upper Extremity Transplantation (UET) is the most common type of Vascularised Composite Allotransplantation (VCA) and this procedure requires a multidisciplinary approach for the evaluation of candidates and management of complex medical, psychiatric and social issues[1,2].

The VCA community, increasingly aware of the importance of psychosocial factors in VCA outcomes [3-6], convened the first international meeting dedicated to the psychosocial aspects of VCA in Paris (France) in 2014 [4]. The workshop, named the Chauvet Meeting for the hand prints found in the Chauvet caves, endeavoured to explore the critical components of the psychosocial assessment of the candidates, and to develop comprehensive guidelines for risk-assessment to improve outcomes in UET.

Components of the psychiatric evaluation identified as important for predicting outcomes in UET included significant past psychiatric history and active symptomatology. The patient's ability to develop a strong therapeutic relationship with the transplant team was considered essential for long-term success of the procedure [7-9].

A survey was sent to all the teams around the world involved in UET in February 2016 to determine priory which psychiatric conditions were considered absolute versus relative contraindications to UET, which psychosocial domains should be evaluated before and after transplantation, and which instruments to use.

The results of the survey were presented and discussed during the Second International Chauvet Workshop, which convened in Paris (France) in September 2016. Attendees included members of VCA teams from countries worldwide including Europe (Austria, France, Italy, Poland, Sweden), USA, Mexico, Turkey, India, Australia, and comprised at that time the majority of programs involved in VCA (upper extremity transplantation: 14 teams; face: 6 teams; and uterus: 2 teams). Herein the conclusions of this process are reported.

4. Survey on Contraindications in UET

A web-based survey was created for the teams to determine which psychiatric conditions were considered to be absolute versus relative contraindications to UET. The items were the same as a similar survey used in solid organ transplantation [10] and the survey was addressed to the leader of all teams involved in UET, although in the majority of cases the psychiatrist or the psychologist of the teams completed the survey.

Respondents were asked to rank the following conditions as relative or absolute contraindications to UET: schizophrenia, severe personality disorders, chronic depression or bipolar disorder, history of past suicidality, nicotine use, history of non-adherence, active substance use, or unreasonable expectations. Respondents were encouraged to state other disorders not included in this list as potential contraindications.

Twenty-seven respondents (100%) answered the first part of the questionnaire concerning UET contraindications. The following conditions were considered to be absolute contraindications (Table 1): active substance use (85.2%), severe personality disorders (74.1%), schizophrenia (66.7%) and unreasonable expectations (66.7%). History of suicidality (70.4%), active nicotine use (66.7%), history of non-adherence (63%), and chronic depression/bipolar (51.9%) were considered relative contraindications (Table 1).

Several respondents considered poor family and/or social support a contraindication (reported as "other" in table 1).

5. Psychosocial Recommendations in UET

The results of the survey were discussed during the second Chauvet workshop and all the VCA center representatives contributed to the psychosocial recommendations in UET.

Most centers consider risk factors in UET to be relative, and potentially modifiable. Certain psychiatric disorders, such as severe personality disorders, active substance abuse (including nicotine), schizophrenia, chronic depression and bipolar disorder were thought to be risk factors for a poor outcome. Unreasonable expectations, a history

Table 1: Survey answers on UET contraindications

Contraindications	None (%)	Relative (%)	Absolute (%)
Schizophrenia	0	33.3	66.67
Severe personality disorder	0	25.93	74.07
Chronic depression/bipolar	3.7	51.85	44.44
Suicidal history	0	70.37	29.63
Nicotine use	18.52	66.67	18.52
History of non-compliance	0	62.96	37.04
Active substance use	0	14.81	85.19
Unreasonable expectations	0	33.33	66.67
Other	33.3	16.67	50.00

of non-adherence, relational difficulties with the team, and lack of social support were also considered risk factors for a poor outcome. Any one risk factor, if severe enough, may constitute an absolute contraindication. The presence of multiple risk factors may also constitute a prohibitive risk. In particular, severe personality disorders, active substance abuse, schizophrenia and unreasonable expectations would typically be considered risk factors that would be associated with a decision not to approve for transplantation.

The psychosocial assessment was considered the principal means of assessing personality, emotional preparedness, cognitive status, copying style, motivation and expectations, and social support. Psychiatrists, psychologists and social workers are involved in this evaluation process.

The attendees recommended that candidates undergo the psychosocial evaluation after meeting with the surgical and medical team members. This sequence may allow the evaluator to assess how well the candidate understands the risks and the benefits of the transplantation following a thorough discussion with the medical and surgical teams. Recommendations also included that candidates undergo re-evaluation at the time of listing, and then annually while on the waiting list.

The psychiatric evaluation of upper extremity transplant candidates consists of clinical interviews supplemented by the use of structured, validated instruments. Three domains emerged as highly valued domains for assessment: Quality of Life (QOL), depression, and anxiety.

Quality of life was considered the most important domain for study both before and after transplantation [21-23] and was recognized by the participants to be a relative concept, both within and across cultures and must take into account both those domains of QOL universally held, and those valued for their uniqueness to a particular environment [24,25].

At present, there are no instruments uniquely devoted to evaluate these domains in UET. It would be better to use in clinical practice instruments that assessed QOL and mood symptomsand which could be used across all transplant centres.

6. Conclusions

Upper extremity transplantation has emerged as feasible option to provide a sensate, functional restoration following limb loss. Candidate selection, evaluator training regarding key areas of assessment and ongoing follow up to address post-transplant demoralization, depression and adherence issues are important and have been the subject of both the Chauvet Workshops on the Psychosocial Aspects of VCA. Goals of the survey and the second Chauvet workshop was to establish scenarios in which candidates would be considered to be at higher psychosocial risk. The results suggest that many of the factors considered higher risk (severe personality disorders, active substance abuse, schizophrenia) are in keeping with risk profiles previously published in solid organ transplantation[26,27]. This represents the first ever international consensus on psychosocial contraindications in UET. However, on April 30, 2020 in Rochester, Minnesota (USA) another Chauvet workshop will be hold to find a common assessment of QOL in UET and to re-examine the psychosocial contraindications in this field of transplantation.

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