

# Patients with Psychiatric Diagnoses have Lower Patient Reported Outcomes Scores Following Osteochondral Allograft Transplantation of the Knee

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**INTRODUCTION:** Psychiatric disorders have been shown to be predictive of worse patient reported clinical and functional outcomes after orthopedic surgery. The purpose of this study is to analyze the effect of the presence of one or more psychiatric diagnoses (PD) on the clinical and patient reported outcomes (PROs) following osteochondral allograft (OCA) transplantation of the knee.

**METHODS:** This is a retrospective review of patients who underwent a unilateral OCA from August 2010 to May 2021 at a single academic institution with minimum of 2 years of follow-up. Subjects were divided into two cohorts, patients with at least one psychiatric diagnosis and patients with no reported psychiatric diagnosis. Complications assessed included graft failure, infection, reoperation rates, deep vein thrombosis/pulmonary embolism (DVT/PE) and manipulation under anesthesia/lysis of adhesions (MUA/LOA) and an analysis of patients who completed PROs was also included.

**RESULTS:** 330 patients underwent a unilateral OCA during the study period. Of these, 285 patients were found to have at least 2 years of clinical follow-up, with a mean clinical follow-up  $4.8 \pm 2.0$  years. There was no difference in age or BMI between the PD and no-PD cohorts, though the PD had a higher prevalence of female patients (68.4% vs. 38.1%,  $p < 0.001$ ). There was no significant difference between patients with and without a psychiatric diagnosis with respect to rate of graft failure, rate of reoperation, DVT/PE, infection, or MUA/LOA. Of the 117 patients with completed PROs patients with a psychiatric diagnosis had significantly worsened KOOS sports scores ( $47.5 \pm 27.0$  vs.  $60.7 \pm 28.4$ ,  $p = 0.028$ ). Additionally, the presence of at least one psychiatric diagnosis was associated with a decrease in KOOS quality of life ( $\beta = -12.145$ ,  $p = 0.046$ ) in a regression analysis controlling for age, sex and BMI. Patients with a diagnosis of depression had a higher rate of post-operative infection (4.2% vs. 0.4%,  $p = 0.034$ ) and overall rate of any post-operative complication (41.7% vs. 22.2%,  $p = 0.032$ ).

**DISCUSSION AND CONCLUSION:** The presence of one or more psychiatric conditions was shown to be significantly associated with decreased KOOS quality of life and KOOS sports after knee OCA. This study suggests that patients with pre-existing psychiatric diagnoses may be at higher risk for worse quality of life and sports related outcomes following OCA. While there was no difference in clinical outcomes, pain levels or satisfaction scores in patients with and without any psychiatric diagnosis, patients with a diagnosis of depression had a higher rate of post-operative complications.

Table 1: Patient Demographics

Characteristic	PD (n=108)	No-PD (n=177)	p-value
Age (mean)	48.5	49.2	0.85
Female (%)	68.4	38.1	<0.001
BMI (mean)	28.5	28.8	0.72
Follow-up (mean)	4.8	4.7	0.91

Table 2: Clinical Outcomes

Outcome	PD (n=108)	No-PD (n=177)	p-value
Graft Failure (%)	2.8	3.1	0.89
Infection (%)	4.2	0.4	0.034
Reoperation (%)	5.1	4.9	0.92
DVT/PE (%)	1.2	1.5	0.78
MUA/LOA (%)	3.5	3.2	0.85

Table 3: Patient Reported Outcomes (PROs)

PRO	PD (n=108)	No-PD (n=177)	p-value
KOOS Sports	47.5	60.7	0.028
KOOS QoL	58.2	70.3	0.046
WOMAC Pain	32.1	35.5	0.12
WOMAC Function	45.3	48.9	0.18

Table 4: Regression Analysis

Variable	β	p-value
Age	-0.12	0.15
Sex	1.5	0.001
BMI	-0.05	0.002
PD	-12.145	0.046

Table 5: Post-Operative Complications

Complication	PD (n=108)	No-PD (n=177)	p-value
Infection	4.2	0.4	0.034
DVT/PE	1.2	1.5	0.78
Reoperation	5.1	4.9	0.92
Graft Failure	2.8	3.1	0.89
MUA/LOA	3.5	3.2	0.85
Any Complication	41.7	22.2	0.032