

Hip functional impairments exist bilaterally, are related to hip strength and are associated with patient-reported outcomes in patients with hip chondrolabral pathology

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INTRODUCTION

Hip arthroscopy is increasingly being used to diagnose and treat intra-articular hip joint pathology MRG 2009, Kemp et al BJSM 2012

Australia – 50% increase since 2010


USA 18-fold increase in past decade

Patients with chondral pathology have worse outcomes and do not improve beyond 12 months post surgery Kemp et al BJSM 2014.

Rehabilitation is common, yet minimal knowledge exists regarding functional performance



AIMS

1. Compare the differences in functional performance tests bilaterally between people with chondrolabral pathology 1-2 years post hip arthroscopy and age matched healthy controls;
 2. Evaluate the relationship between functional performance and hip strength;
 3. Determine whether and measures of functional performance were associated with patient-reported outcomes in people with chondrolabral pathology; and
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STUDY DESIGN

355 consecutive patients invited to participate in study from single surgeon

152 responded to invitation

52 did not fulfil eligibility criteria

100 patients recruited

29 patients excluded as not chondrolabral, or bilateral scope

71 patients recruited 12-24 months post

60 age matched controls recruited from community

PROs, hip muscle strength, tests of functional performance

METHODOLOGY

Inclusion Criteria:

Aged 18-60 years

Able to speak and read English

No current LBP or other lower limb injuries

Additional criteria – Controls:

No history of hip surgery

No hip pain in previous 6 months

Additional criteria – Hip arthroscopy:

Unilateral surgery 12-24 months previously

Chondral (Outerbridge I-IV) and/or labral pathology requiring intervention Kemp JMNI

METHODOLOGY Outcomes

Patient-reported outcome measure = IHOT33 International Hip Outcome Tool Mohtadi 2013, Kemp 2014

Hip muscle strength Hip joint peak torque (normalised) = Nm/kg
Abduction, Adduction, Extension, Flexion, External rotation, Internal rotation Kemp 2013

Functional performance measures

Single leg hop test Crossley 2007

Hands held behind back, bare footed, greatest of 3 trials

Side bridge test McGill 1999

Single trial, timed encouragement, measured in seconds, test ended when hips touch floor, no measure of quality

One leg rise test Thorstensson 2004

Arms crossed, bare footed, contra-lateral leg extended in front; Single trial
Knee 90° flexion, foot in standardised position Maximum 50 repetitions

DATA ANALYSIS

Aim 1: Between-limb differences were compared between the two groups using analyses of co-variance (ANCOVA).

Aim 2: Pearson's correlation coefficients (r) and stepwise multiple linear regression analyses (co-variates of age, sex and severity of chondropathy) determined the relationship between the between functional performance measures (surgical leg) and hip muscle strength in the chondrolabral group.

Aim 3: Stepwise multiple linear regressions determined the relationship between functional performance measures (surgical leg) and the PROs in the chondrolabral group

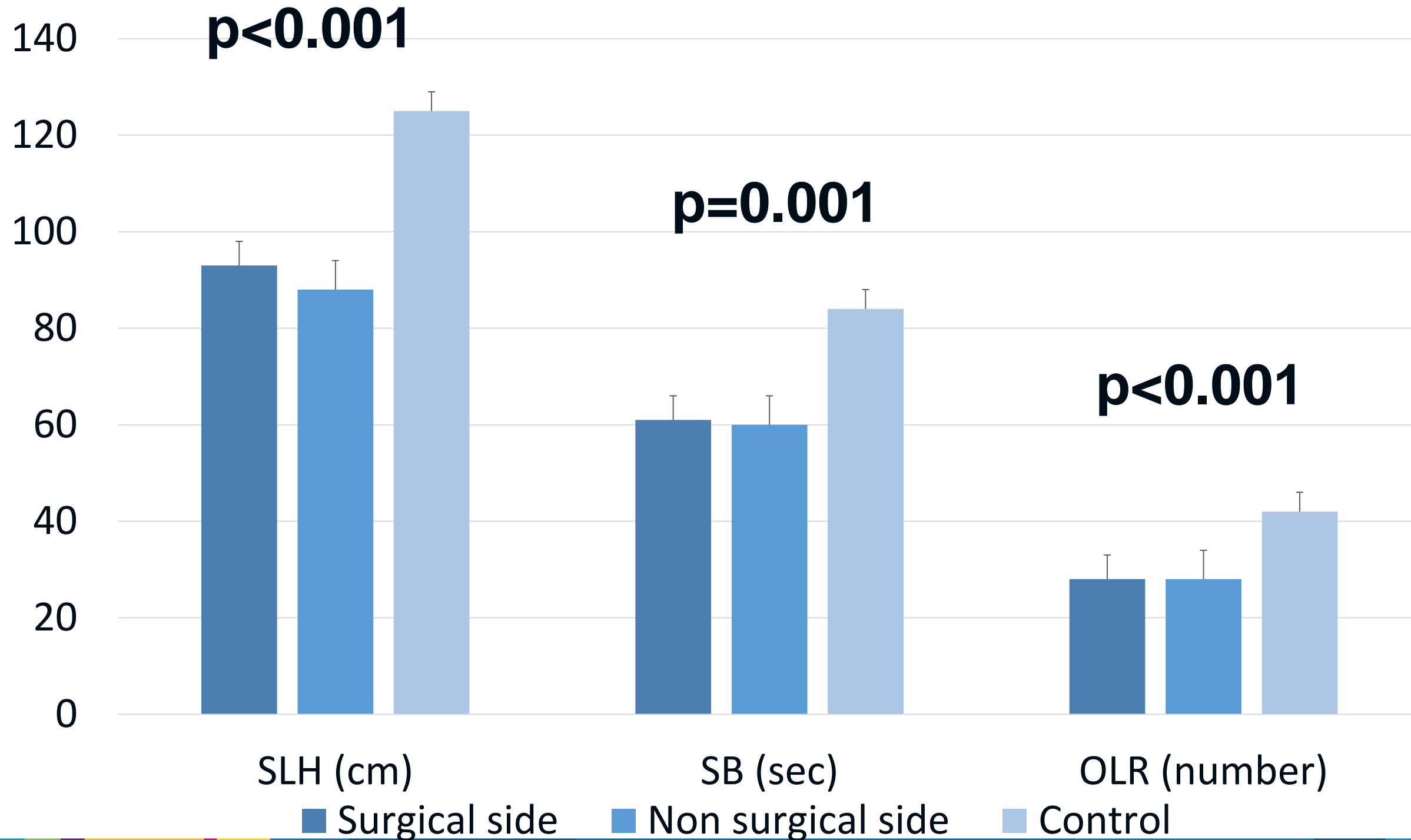
($p < 0.05$)



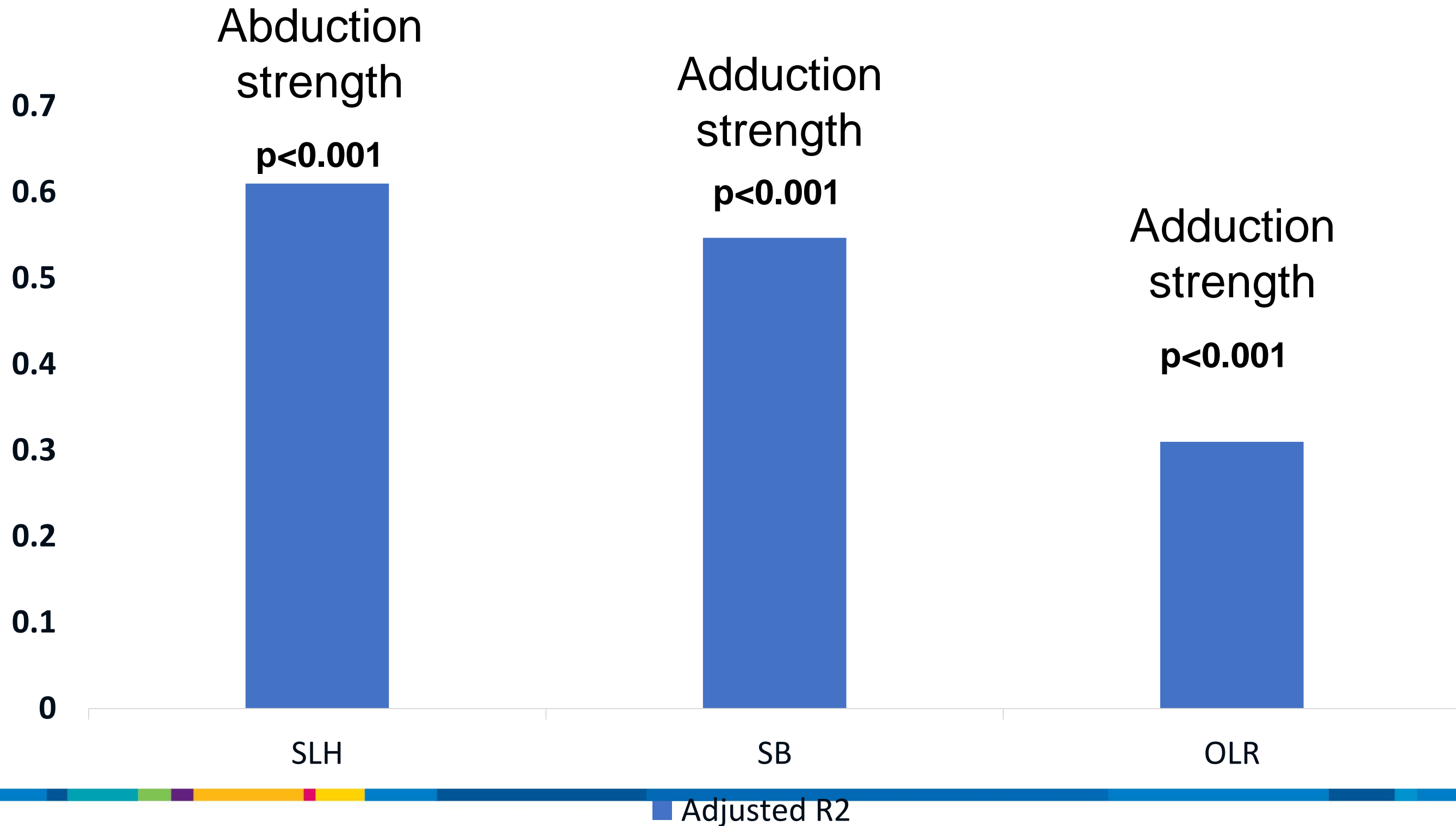
RESULTS: Participant characteristics

Variable	Chondrolabral group (n=71)	Control group (n=60)	Significance (p-value)
	Mean(SD)	Mean(SD)	
Age (years)	36.2(12)	35.7(10)	0.220
Gender (%women)	51%	68%	0.050
Height (metres)	1.74(0.10)	1.71(0.09)	0.591
Weight (kilograms)	77.3(12.2)	70.0(11.9)	<0.001
BMI (m/kg²)	26.3(5.9)	23.4(3.4)	0.003
Hours of physical activity per week*	4.4(3.8)	4.3(1.7)	0.824

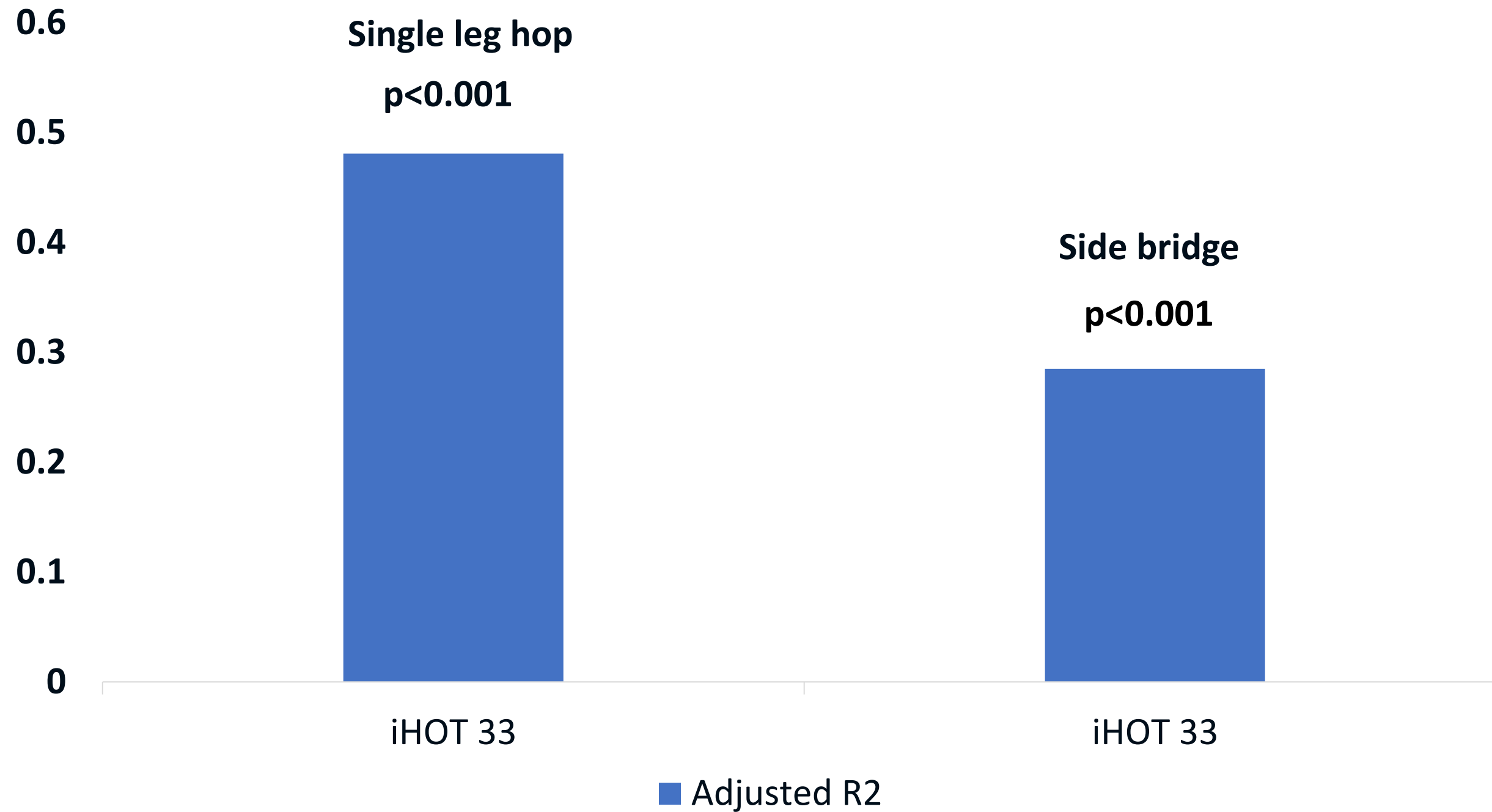
RESULTS: Aim 1



RESULTS: Aim 2



RESULTS: Aim 3



RESULTS SUMMARY

Patients with hip chondrolabral pathology have bilateral impairments on functional performance tests 12-24 months after unilateral hip arthroscopy compared to controls.

In patients with chondrolabral pathology, greater strength in hip abduction and adduction were associated with better functional performance.

Better performance in the side bridge and hop tests were associated with better PROs

