

Quality of Life Outcomes in Patients Treated With SI-6603 (Condoliase) for Radicular Leg Pain Associated With Lumbar Disc Herniation: Results From a Phase 3, Randomized, Sham-Controlled Trial

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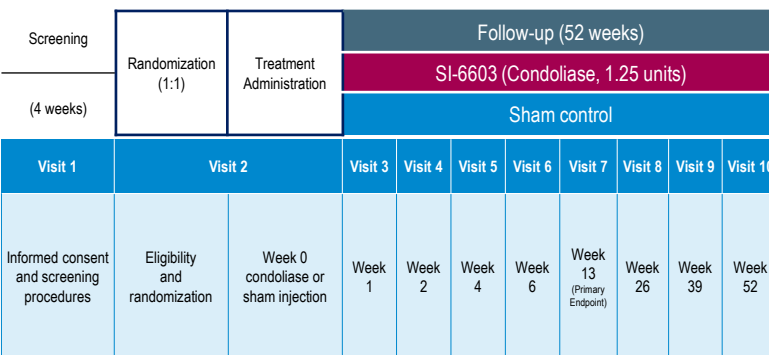
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INTRODUCTION

- Radicular leg pain negatively impacts health-related quality of life (HRQoL) and is associated with more disability and work absenteeism than low back pain alone^{1,2}
- SI-6603 (condoliase), a mucopolysaccharidase with high substrate specificity for chondroitin sulfate in the nucleus pulposus, is approved in Japan for radicular leg pain due to lumbar disc herniation (LDH)^{3,4}
- In the US phase 3 Discovery study (NCT03607838), participants who received condoliase showed significantly greater improvements in worst leg pain at Week 13 vs sham⁵
- Condoliase was well tolerated in participants with LDH, with no serious adverse events considered related to condoliase in the US phase 3 trial⁵
- Here, we report relevant HRQoL endpoints from the US phase 3 Discovery study

METHODS

Figure 1. Study Design



- Inclusion criteria:** Adults 30 to 70 years of age with contained posterolateral LDH, radicular leg pain, and inadequate improvement in pain caused by LDH despite ≥6 weeks of conservative treatment
- Primary endpoint:** Change from baseline (CFB) to Week 13 in worst leg pain (past 24 hours averaged over previous 7 days) assessed by 100-mm visual analogue scale
- Supportive QoL endpoints:**
 - CFB in 36-item Short Form Health Survey (SF-36), including physical component score (PCS) and mental component score (MCS) at Weeks 4, 6, 13, 26, 39, and 52
 - CFB in EuroQol Group 5-Dimension Quality of Life instrument (EQ-5D-5L) and visual analogue scale (EQ-VAS) at Week 13 and Week 52
 - CFB in Work Productivity and Activity Impairment Questionnaire (WPAI) scores at Week 13 and Week 52
 - Patient Global Impression of Change (PGIC) at Weeks 2, 4, 6, 13, 26, 39, and 52
 - Clinical Global Impression of Change (CGIC) at Weeks 2, 4, 6, 13, 26, 39, and 52
- Statistical Analysis:**
 - QoL analyses were exploratory in nature and not part of the α-controlled hierarchical testing procedure
 - A longitudinal analysis model was used for the analysis of CFB in EQ-5D-5L, EQ-VAS, and SF-36; it included categorical effects of treatment, study week, and treatment by study week interaction, as well as the baseline value as a fixed effect
 - WPAI scores were analyzed with the analysis of covariance model, with baseline values and duration of leg pain as covariates

KEY TAKEAWAYS

- In this phase 3 RCT, condoliase significantly improved worst leg pain at Week 13 (vs sham) and was well tolerated in participants with LDH
- Condoliase was associated with improvements in self-care and pain/discomfort (vs sham)
- Patients more frequently reported their global impression of change to be “very much improved” following condoliase treatment vs sham
- Condoliase shows therapeutic potential as a nonsurgical alternative treatment for LDH

RESULTS

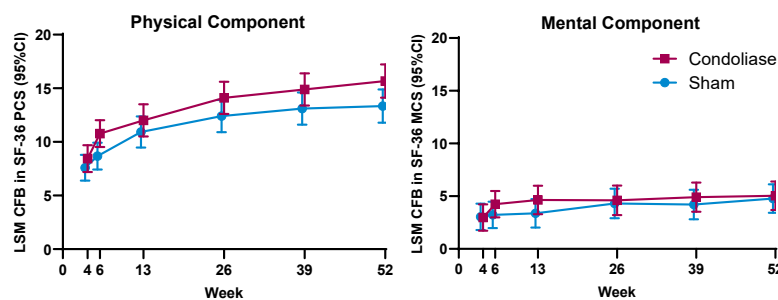
Table 1. Baseline Participant Characteristics

	Condoliase (n=169)	Sham (n=172)
Age, mean (SD), years	46.8 (9.4)	45.9 (9.8)
Female sex, n (%)	74 (43.8)	83 (48.3)
Race, n (%)		
White	137 (81.1)	142 (82.6)
Black/African American	18 (10.7)	14 (8.1)
Asian	6 (3.6)	9 (5.2)
Other ^a	8 (4.7)	7 (4.1)
BMI, mean (SD), kg/m ²	29.0 (4.9)	28.4 (4.9)
Current/past smoker, n (%)	63 (37.3)	69 (40.1)
Heavy labor, n (%)	39 (23.1)	49 (28.5)
Worst leg pain, mean (SD), mm	72.0 (9.6)	71.8 (9.8)
ODI score, mean (SD)	48.2 (11.8)	49.1 (11.9)
Herniation site, n (%)		
L4-L5	70 (41.4)	71 (41.3)
L5-S1	99 (58.6)	101 (58.7)

^aOther includes American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, and Other. BMI, body mass index; ODI, Oswestry Disability Index; SD, standard deviation.

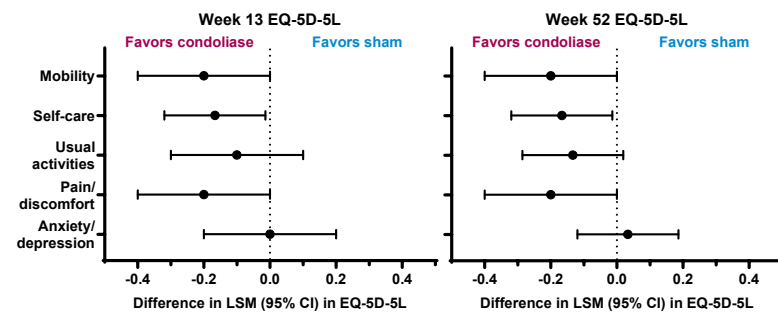
- Baseline participant characteristics were similar across treatment groups
- Participants in the condoliase group were less frequently female and less likely to have an occupation requiring heavy labor

Figure 2. LSM CFB in SF-36 PCS and MCS



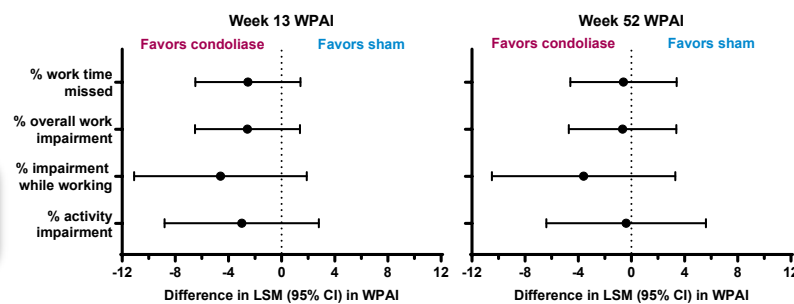
- The least squares mean (LSM) CFB in SF-36 PCS score favored condoliase at all time points

Figure 3. LSM CFB in EQ-5D-5L



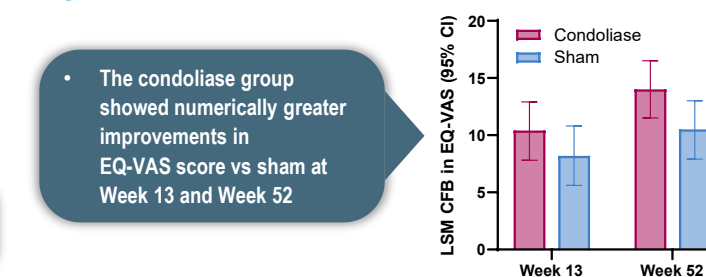
- The condoliase group showed greater improvements in self-care and pain/discomfort domains vs sham at Week 13 and Week 52

Figure 4. LSM CFB in WPAI



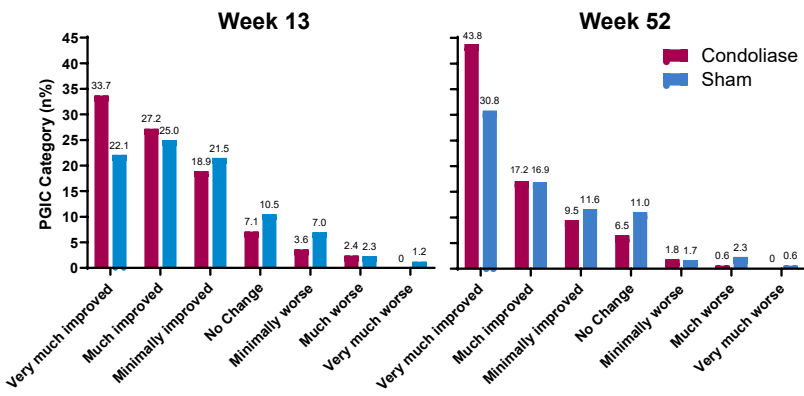
- CFB in WPAI scores favored condoliase vs sham at Week 13 and Week 52

Figure 5. LSM CFB in EQ-VAS



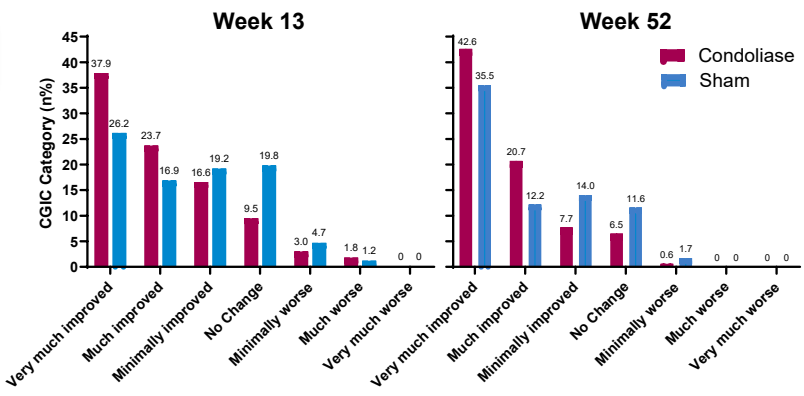
- The condoliase group showed numerically greater improvements in EQ-VAS score vs sham at Week 13 and Week 52

Figure 6. Patient Global Impression of Change



- Patients perceived their overall status to be “very much improved” more frequently with condoliase vs sham at Week 13, which was sustained until Week 52

Figure 7. Clinical Global Impression of Change



- Physicians rated the overall status for the condoliase group as “very much improved” and “much improved” more frequently with condoliase vs sham at Week 13 and Week 52

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