**Supplementary Table 1.** Individual study demographics

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Study | Follow-up (months) | Patients | Treatment | Treatment details | Time to full weightbearing (weeks) | Time to ROM (weeks) | Excluded comorbidities | Risk factor prevalence | Not reported |
| Aisaiding et al. [1] | 24 | Mean age: 57 years,  81% male |  |  |  |  | Diabetes, preexisting tendinopathy | Fluoroquinolone use (10.3%), steroid use (30.4%) | Smoking status |
| Intervention |  | 23 | Minimally invasive surgery | Achillon, #2 Ethibond | 3 | 3 |  |  |  |
| Comparator |  | 29 | Open surgery | Achillon, #2 Ethibond | 3 | 3 |  |  |  |
| Aktas et al. [2] | 23 | Mean age: 40 years,  88% male |  |  |  |  | Preexisting tendinopathy |  | Smoking status, fluoroquinolone use, steroid use, diabetes status |
| Intervention |  | 20 | Minimally invasive surgery | Tenolig | 6-7 | 4 |  |  |  |
| Comparator |  | 20 | Open surgical repair | Modified Ma & Griffith | 6-7 | 3 |  |  |  |
| Cetti et al. [10] | 12 | Mean age: 37 years, 83% male |  |  |  |  | Preexisting tendinopathy |  | Smoking status, fluoroquinolone use, steroid use, diabetes status |
| Intervention |  | 55 | Primary immobilization | Plantar flexion plaster of Paris cast | 6-7 | 4 |  |  |  |
| Comparator |  | 56 | Open surgical repair | End-to-end Bunnell technique | 6-7 | 3 |  |  |  |
| Gigante et al. [21] | 24 | Mean age: NR, % male NR |  |  |  |  | Preexisting tendinopathy, steroid use |  | Smoking status, fluoroquinolone use, steroid use, diabetes status |
| Intervention |  | 20 | Minimally invasive surgery | Plantar flexion plaster of Paris cast | 6-7 | 4-5 |  |  |  |
| Comparator |  | 19 | Open surgical repair | With #1 PDS | 6-7 | 4-5 |  |  |  |
| Karabinas et al. [41] | 22 | Mean age: 41 years, 80% male |  |  |  |  | Preexisting tendinopathy, steroid use |  | Smoking status, fluoroquinolone use, steroid use, diabetes status |
| Intervention |  | 19 | Minimally invasive surgery | Modified Ma and Griffith technique | 6-7 | 3 |  |  |  |
| Comparator |  | 15 | Open surgical repair | Krakow technique with #1 Ethibond | 6-7 | 3 |  |  |  |
| Keating et al. [30] | 12 | Mean age: 40 years, 79% male |  |  |  |  | Preexisting tendinopathy |  | Smoking status, fluoroquinolone use, steroid use, diabetes status |
| Intervention |  | 39 | Primary immobilization | Casting 4 weeks in plantar flexion, 4 weeks in some plantar flexion, 2 weeks in neutral | 8 | 10 |  |  |  |
| Comparator |  | 37 | Open surgical repair | Kessler technique using PDS and vicryl | NR | NR |  |  |  |
| Kolodziej et al. [46] | 24 | Mean age: 46 years, 96% male |  |  |  |  | Preexisting tendinopathy, fluoroquinolone use, steroid use, diabetes |  | Smoking status |
| Intervention |  | 22 | Minimally invasive surgery | Krakow technique, absorbable suture | 6 | NR |  |  |  |
| Comparator |  | 25 | Open surgical repair | Achillon, absorbable suture | 6 | NR |  |  |  |
| Lantto et al. [49] | 18 | Mean age: 40 years, 91% male |  |  |  |  | Preexisting tendinopathy, diabetes, steroid use |  | Smoking status, fluoroquinolone use |
| Intervention |  | 32 | Open surgical repair | Krakow technique with #2 FiberWire | 1 | 1 |  |  |  |
| Comparator |  | 28 | Functional rehabilitation | Maximal plantar flexion and nonweightbearing for 1 weeks, orthosis with weekly reduction in plantar flexion until no orthosis by week 7 | 1 | 1 |  |  |  |
| Lim et al. [52] | 6 | Mean age: 38 years, 59% male |  |  |  |  | Fluoroquinolone use |  | Preexisting tendinopathy, diabetes, steroid use, smoking status |
| Intervention |  | 33 | Minimally invasion surgery | Modified Ma and Griffith technique | NR | NR |  |  |  |
| Comparator |  | 33 | Open surgical repair | Modified Kessler technique with PDS | NR | NR |  |  |  |
| Majewski et al. [54] | 31 | Mean age: 38 years, 81% male |  |  |  |  | Steroid use, preexisting tendinopathy |  | Fluoroquinolone use, smoking status, diabetes |
| Intervention |  | 30 | Minimally invasive surgery | NR | NR | NR |  |  |  |
| Intervention |  | 14 | Functional rehabilitation | NR | NR | NR | NR |  |  |
| Comparator |  | 29 | Open surgical repair | NR | NR | NR |  |  |  |
| Metz et al. [60] | 42 | Mean age: 41 years, 62% male |  |  |  |  |  | Fluoroquinolone use (10%) | Preexisting tendinopathy, diabetes, steroid use, smoking status |
| Intervention |  | 41 | Functional rehabilitation | Plantar flexion cast week 1, then progressively less plantar flexion in a custom orthosis | 1 | 31 |  |  |  |
| Comparator |  | 42 | Minimally invasive surgery | Bunnell technique with #1 PDS | 1 |  |  |  |  |
| Möller et al. [62] | 24 | Mean age: 39 years, 89% male |  |  |  |  |  |  |  |
| Intervention |  | 53 | Primary immobilization | Below-knee cast | 4 | 8 | Preexisting tendinopathy, diabetes |  | Fluoroquinolone use, steroid use, smoking status |
| Comparator |  | 59 | Open surgical repair | Modified Kessler technique | 8 | 3 |  |  |  |
| Nilsson-Helander et al. [64] | 12 | Mean age: 41 years, 81% male |  |  |  |  | Steroid use, preexisting tendinopathy, diabetes |  | Fluoroquinolone use, smoking status |
| Intervention |  | 49 | Open surgical repair | Kessler technique with #1 PDS | 6-8 | 2 |  |  |  |
| Comparator |  | 48 | Functional rehabilitation |  | 6-8 | 2 |  |  |  |
| Nistor et al. [65] | 60 | Mean age: 41 year, % male NR |  |  |  |  |  |  | Steroid use, preexisting tendinopathy, diabetes, fluoroquinolone use, smoking status |
| Intervention |  | 44 | Open surgical repair | Bunnell technique | 4 | 2 |  |  |  |
| Comparator |  | 60 | Primary immobilization | Plantar flexion cast then shoe with heel lift | 4 | 4 |  |  |  |
| Rozis et al. [73] | 12 | Mean age: 41 years, % male NR |  |  |  |  | Steroid use, preexisting tendinopathy, diabetes |  | Fluoroquinolone use, smoking status |
| Intervention |  | 41 | Minimally invasive  surgery | Ma and Griffith technique | 6 | 6 |  |  |  |
| Comparator |  | 41 | Open surgical repair | Krakow technique | 6 | 6 |  |  |  |
| Thermann et al. [85] | 12 | Mean age: 37 years, 78% male |  |  |  |  |  |  | Steroid use, preexisting tendinopathy, diabetes, fluoroquinolone use, smoking status |
| Intervention |  | 22 | Open surgical repair | Kessler technique with #1 PDS | 1 | 8 |  |  |  |
| Comparator |  | 28 | Functional rehabilitation | Custom orthosis | 1 | 8 |  |  |  |
| Twaddle et al. [88] | 12 | Mean age: 41 years, 67% male |  |  |  |  | Smoking status |  | Fluoroquinolone use, diabetes, steroid use |
| Intervention |  | 20 | Open surgical repair | Krakow technique, #1 | 6 | NR |  |  |  |
| Comparator |  | 22 | Functional rehabilitation |  | 6 | NR |  |  |  |
| Willits et al. [96] | 24 | Mean age: 41 years, 82% male |  |  |  |  | Fluoroquinolone use, preexisting tendinopathy |  | Smoking status |
| Intervention |  | 72 | Open surgical repair | Krakow technique, #2 | 2 | Standard accelerated protocol |  |  |  |
| Comparator |  | 72 | Functional rehabilitation |  | 2 | Standard accelerated protocol |  |  |  |