ERAS in an outpatient total hip arthroplasty program in Belgium: A case series

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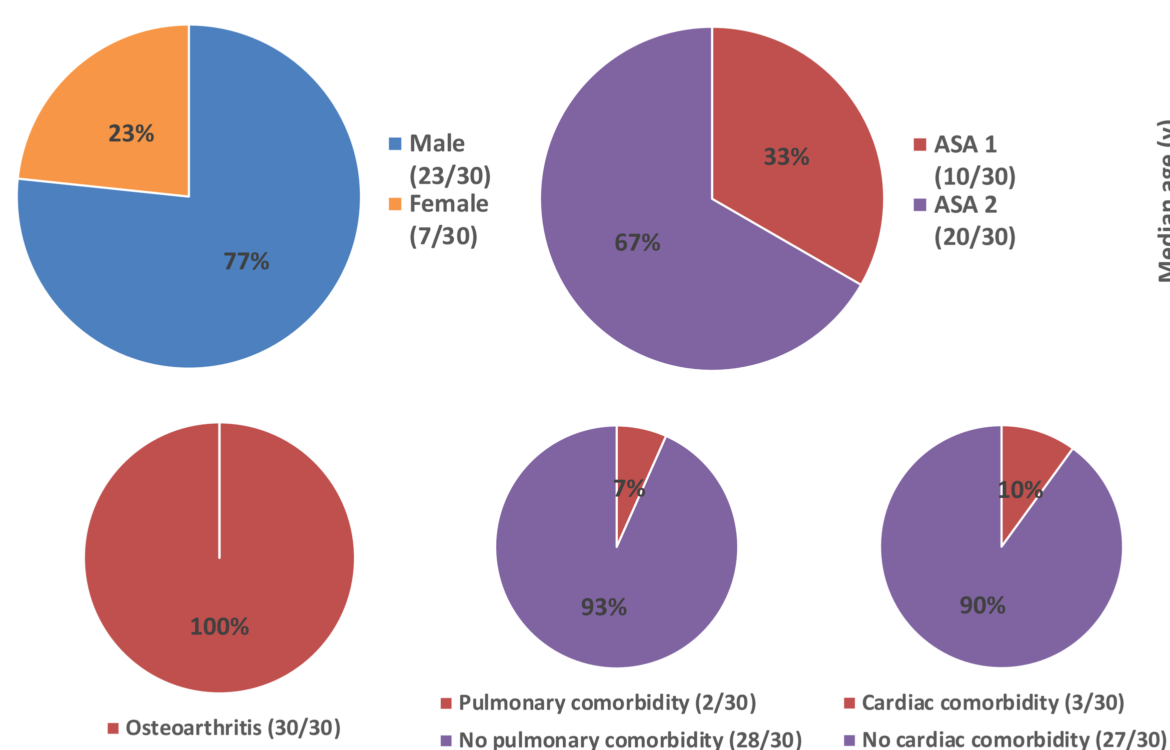
OBJECTIVES

Enhanced recovery after surgery (ERAS) is a multimodal, evidence-based approach to control patient's perioperative pathophysiology, reduce organ dysfunction, and promote better recovery after surgery (1). In orthopedic surgery, ERAS results in reduced length of stay (LOS), less complications, better patient-reported outcome measures (PROMs) and cost-effectiveness (2-4). The final evolution to outpatient hip arthroplasty has been shown to be feasible in selected and unselected patients (5,6). We report the results of the first 30 total hip arthroplasty patients performed in an outpatient setting, using an ERAS program in a primary hospital in Belgium.

METHODS

Patients were included for a 'same calendar day discharge (SCDD)' setting, depending on specific inclusion criteria. A standardized perioperative protocol was used with specific discharge criteria, as shown in table 2 and 3, and a follow-up period of three months postoperatively.

Patients



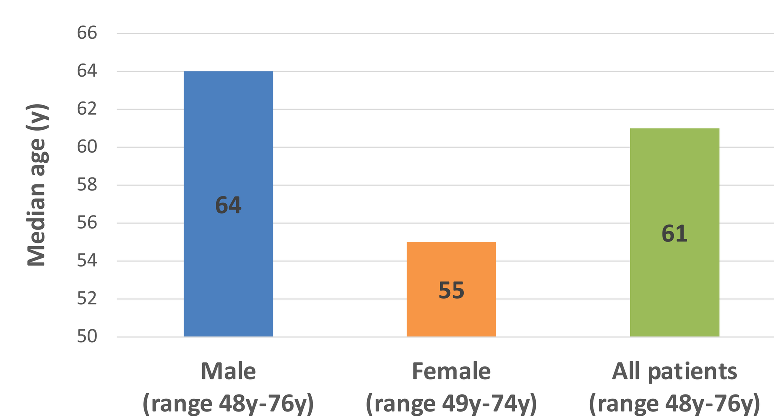


Figure 1: Demographic data of included patients

Inclusion criteria outpatient

Inclusion criteria
Motivated
Good social support
No insulin dependent diabetes mellitus
BMI <35
No anticoagulants or anti-aggregants (exception Asaflow/Cardioaspirin)
No revision
No infectious focus
No psychiatric disease
ASA score 1 and 2

Table 1: Inclusion criteria for outpatient setting

Discharge criteria outpatient

Discharge criteria
Walk 30m with crutches
Able to climb the stairs
Independently: dress him/herself & toilet visit & bathroom transfer
VAS-score <4 (rest) + VAS-score <6 (action)
Dry wound
No nausea or vomiting or controlled by medication
Stable vital signs: Heart rate <100/min in rest, saturation >95% without oxygen, blood pressure <20mmHg deviation compared to normal (or systolic blood pressure >100mmHg)

Table 2: Discharge criteria for outpatient setting

Outpatient total hip arthroplasty

Preoperative
Preoperative education (group session)
Preoperative optimization (*physiotherapy, screening and treatment for preoperative anemia, smoking cessation, alcohol withdrawal,…)*
Intraoperative
Pre-emptive analgesia (Paracetamol and Oxycodone)
Short fasting (6-2 rule) policy and carbohydrate loading
PENG-block (Ropivacaine 0.5% 15mL) with option of supplemental sedation (1-2mg Midazolam)
General anesthesia with Target controlled infusion (*Propofol, Remifentanyl, deep neuromuscular blockade with neuromuscular (Train-of-Four) and cerebral (Bispectral index) monitoring)*
Additional medication (*Methylprednisolone 125mg, NSAID, tranexamic acid, antibiotics)*
Minimal invasive surgery approach (Superpath®) with a posterior LIA (Local infiltration analgesia) (Ropivacaine 0.2% 100mL)
Postoperative
First mobilisation 45-60min after skin clossure (Post Anesthesia Care Unit)
Second and third session of active (walking with crutches, climbing and descending stairs,…) mobilization (Ward)
Standard multimodal analgesia protocol (*Paracetamol, NSAID, Oxycodone)*
Specific discharge criteria
Postoperative follow-up until 3 months after surgery

Table 3: Outpatient total hip arthroplasty pathway

RESULTS

All patients achieved same day discharge. No reoperations or readmissions were noted. Three patients experienced persistent postoperative pain in the operated limb where a (pre-existent concomitant) lumbar spine cause was identified and treatment started.

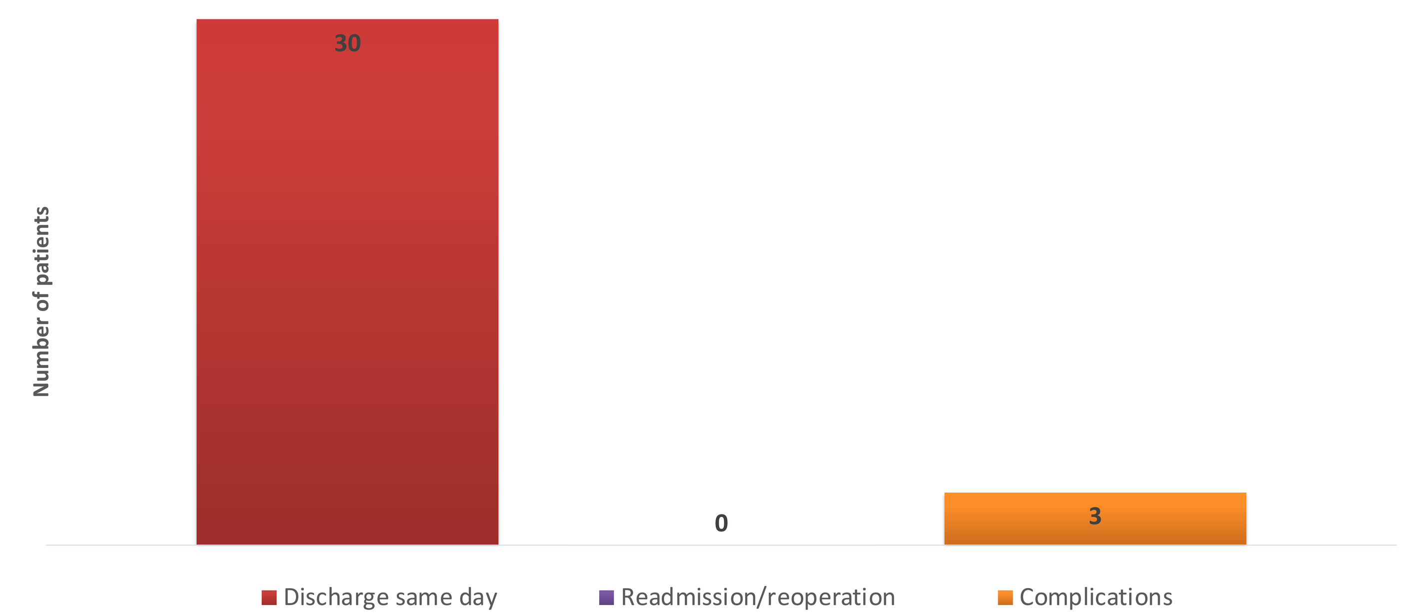


Figure 2. Primary and secondary outcomes (discharge same day – readmission/reoperation – complications)

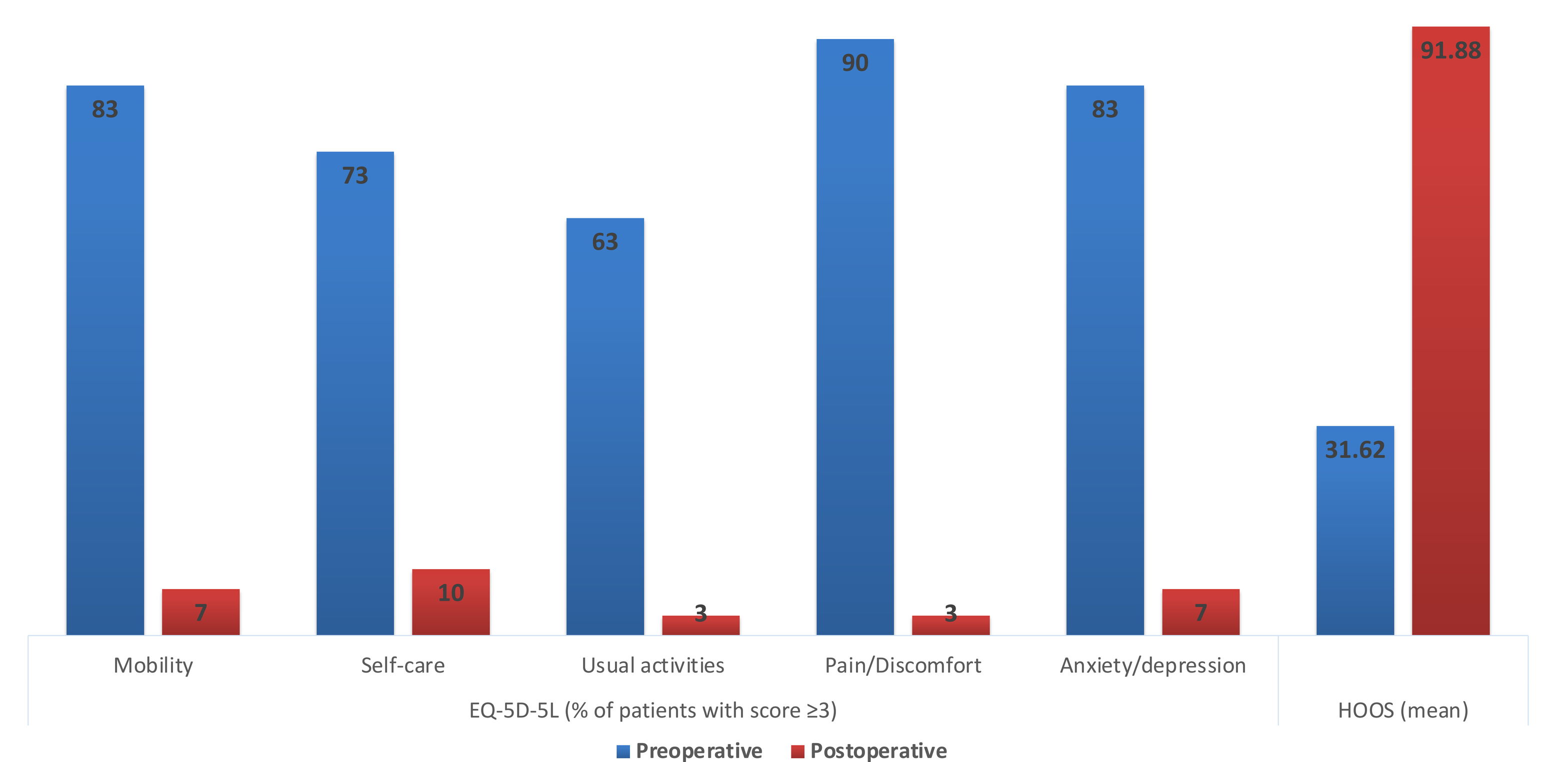


Figure 3. Pre- and postoperative EQ-5D-5L and HOOS (Hip disability and Osteoarthritis outcome) score
EQ-5D-5L shown as percentages of problems rated from 'moderate' to 'extreme' for each item category of the EQ-5D-5L.

Pain score	Mean ± 1 SD
NPRS preoperative	6.93 ± 1.71
NPRS postoperative	0.75 ± 1.54
PREM	**Mean ± 1 SD**
Patient satisfaction	9.24 ± 1.04

Table 4. NPRS (Numeric pain rating scale) and patient satisfaction

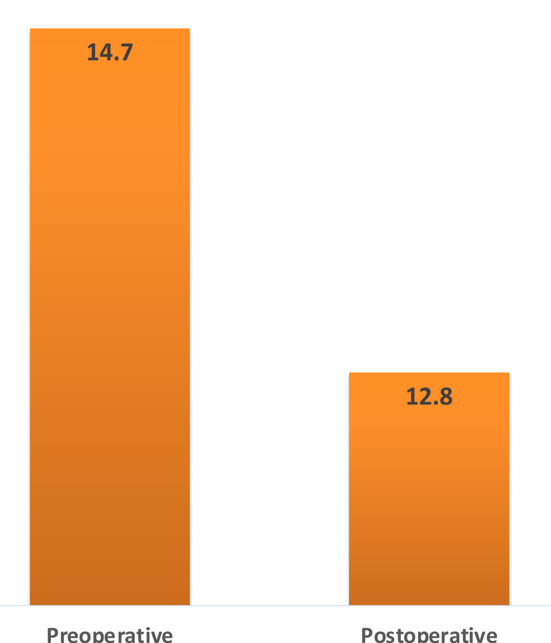


Figure 4. Pre- and postoperative Hemoglobin concentration

CONCLUSIONS

Outpatient total hip arthroplasty can safely be performed in selected patients using a multimodal ERAS approach and leads to excellent results in terms of complications, patient satisfaction and feasibility of same calendar day discharge. Future trials in Belgium should focus on facilitating intramural to extramural care and how this can be achieved without reducing quality of care.

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