

When Less is More: Medication dose adjustments in low body weight adults

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Background

Physiological differences in patients with low body weight (LBW) compared to the general population, such as decreased lean body weight, lower body fat mass and the consequent smaller volume of distribution for lipid-soluble drugs, necessitates dose reduction of some medicines to minimise toxicity and side effects.¹ Substantial clinical emphasis is placed on physiological differences in overweight and obese patients, however similar scrutiny does not appear to be applied to LBW patients in local practice. This may be due to issues with consistent documentation of weight and low clinician awareness of recommended dose adjustments in LBW inpatients.

Aims

To understand current local practices relating to medicine dose adjustments in LBW patients and inform medicines safety strategies for the cohort by:



Determining the extent of inpatient weight documentation in clinical notes



Calculating the proportion of LBW inpatient medicine doses appropriately adjusted per clinical guidelines²⁻⁶



Assessing the proportion of medicine orders not adjusted for LBW, where adjustments are suggested at pharmacist review

Methods

Six wards within the medical and surgical services of a 265-bed, outer metropolitan hospital facility were subjected to a weekly snapshot audit over four consecutive weeks in June-July 2021. All adult inpatient charts in the wards at the time of review were audited for body weight documentation within their bedside chart or clinical notes. Three medications (paracetamol, thromboprophylactic enoxaparin and metoclopramide) were selected for evaluation due to the existence of local guidelines recommending dose adjustments in LBW:

Paracetamol^{2,4-5}

500mg 4-6 hourly
PO/IV if <50kg
(Maximum 15mg/kg
every 4-6 hours)

Thrombo- prophylactic Enoxaparin⁶

20mg once daily
subcut if <50kg

Metoclopramide³

5mg 8-hourly
PO/IV/IM if <60kg
(Maximum 0.5mg/kg
in 24 hours)

Figure 1: Recommended dose adjustments in LBW

For LBW patients (defined as weight <50kg) prescribed any of these medicines, the following questions were assessed:

1. Was the dose reduced according to the relevant guideline?
2. Had the medication chart had been reviewed by a pharmacist?
 - If yes, was a recommendation to reduce the dose documented on the patient's Medication Action Plan (MAP)?

Results

362/453 (79.91%) of charts audited contained a recorded body weight within the documents pertaining to the admission. The location of documented body weights was inconsistent, with weights found across 17 different clinical forms.

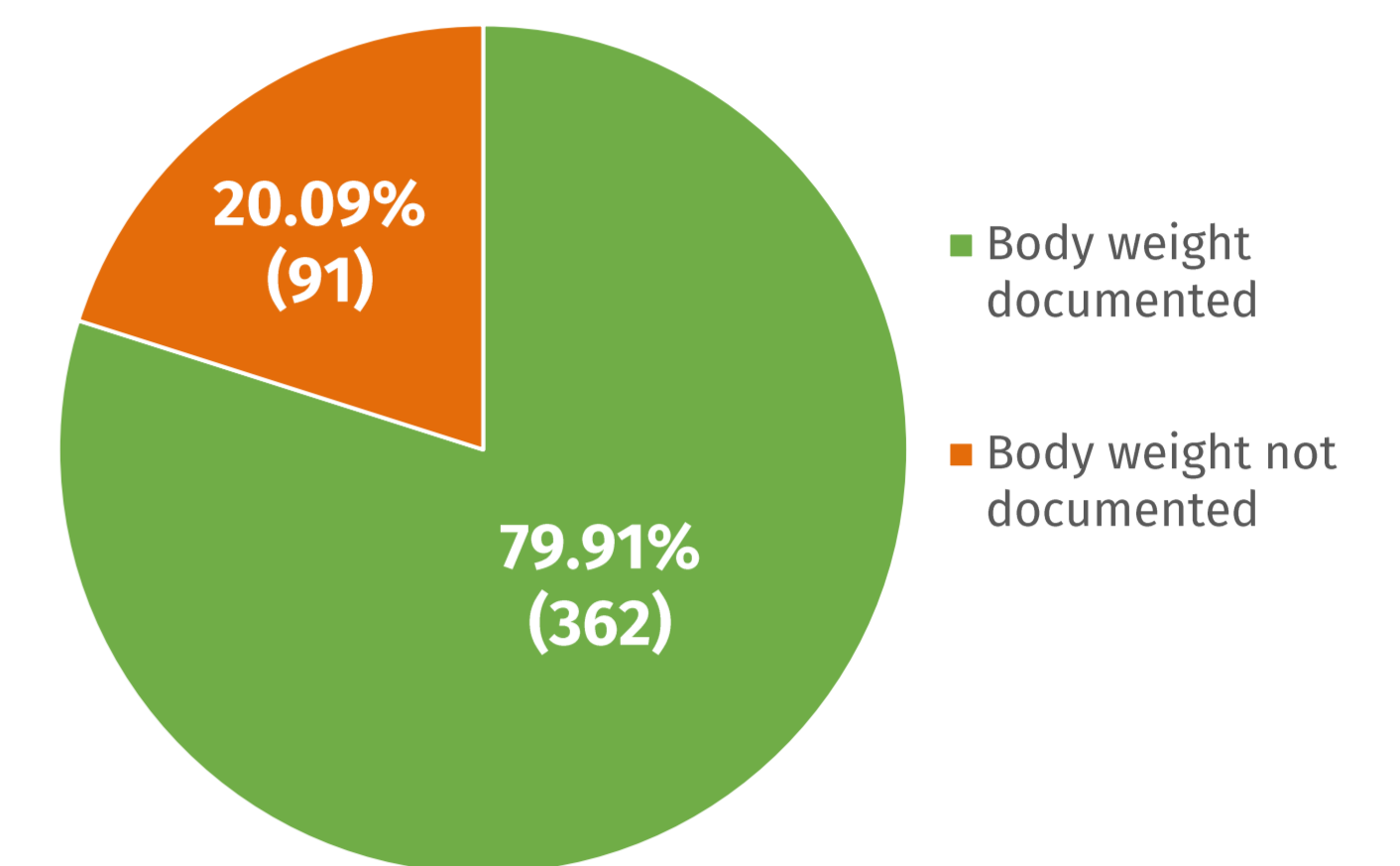


Figure 2: Overall proportion of body weight documentation in clinical documents

The overall proportion of LBW patients identified was 35/453 (7.73%), with an average weight of 43.4kg and a median weight of 44.4kg.

Figure 3: Proportion of LBW patient medication orders adjusted per relevant guideline

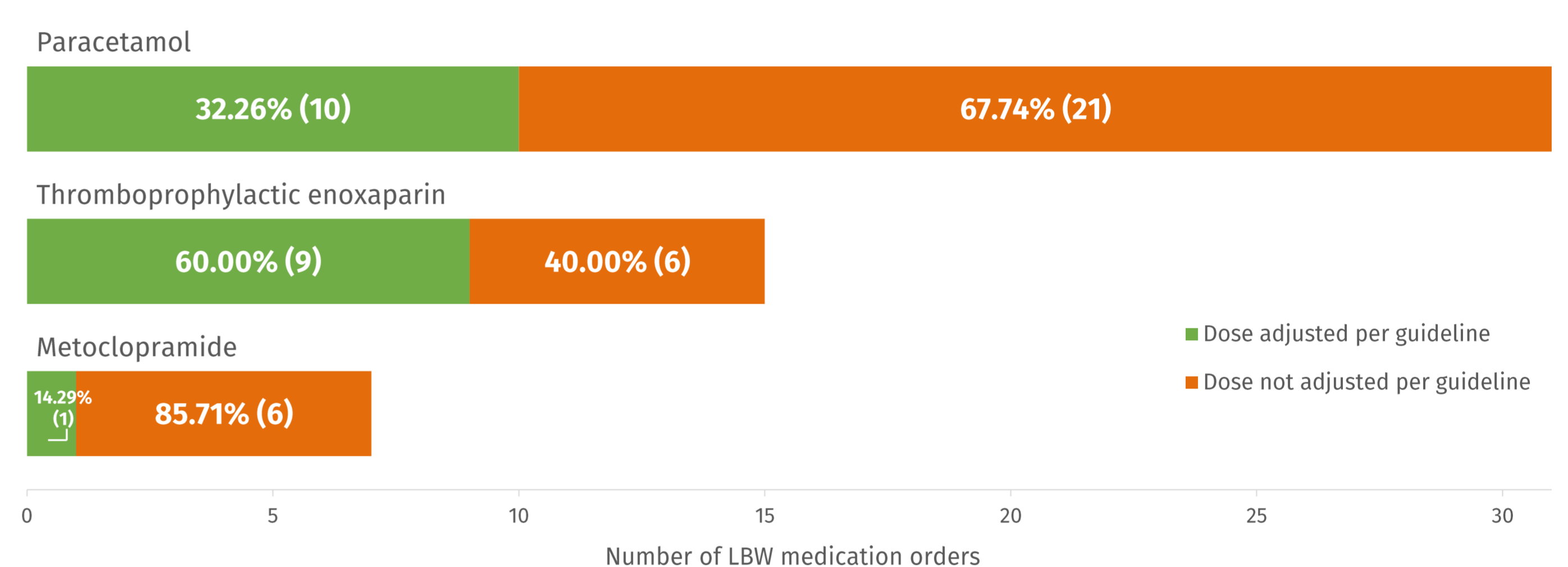
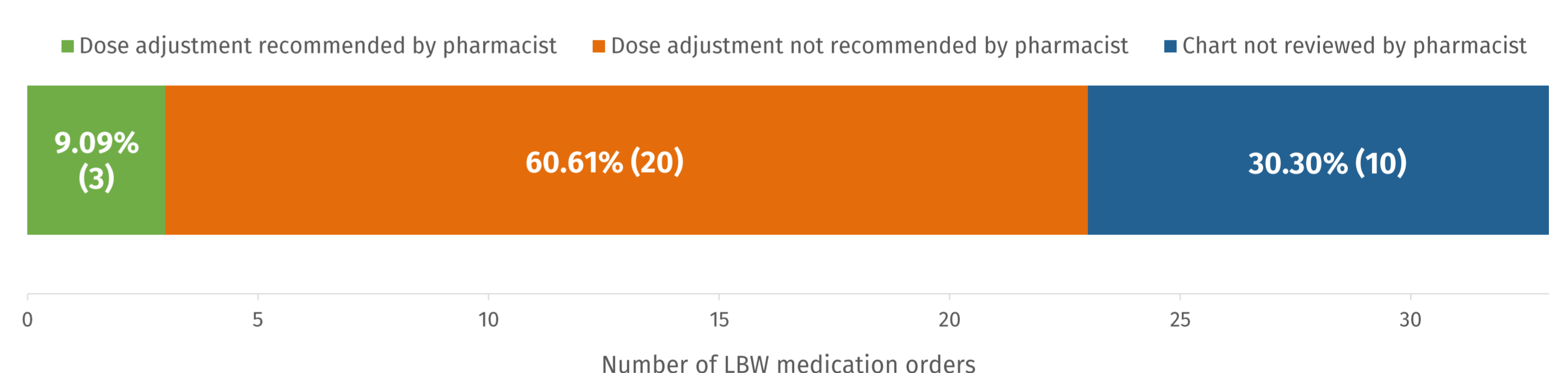


Figure 4: Proportion of orders not appropriately dose adjusted with pharmacist recommendation on MAP



Two of the orders with a pharmacist recommendation to reduce the dose were for paracetamol, and one was for thromboprophylactic enoxaparin.

Conclusion

Ensuring that medicine doses are both safe and therapeutic is essential to their quality use. Safe management of medicines in LBW patients relies on consistent documentation of weight and clinician awareness of recommended dose adjustments. The audit results highlight a need for a standardised, multidisciplinary approach to weight documentation, partnered with education to improve knowledge of recommended LBW dose reductions for medical practitioners, nurses and pharmacists alike. Counselling patients on discharge about the importance of maintaining these adjusted doses is also encouraged.

References

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