

Early response in the treatment of invasive Candida disease, length of stay on the intensive care unit and projected costs with once-weekly rezafungin antifungal therapy

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INTRODUCTION AND OBJECTIVES

- Candidaemia and invasive candidiasis (IC) remain significant causes of morbidity and mortality. The associated health economic burden is largely due to prolonged hospital and intensive care unit (ICU) stays, contributing more than half of the total costs.¹
- Rezafungin is a Phase 3, once-weekly echinocandin antifungal agent that offers prolonged half-life and high front-loaded plasma exposures.²⁻⁴
- The current post-hoc analysis examines data from the rezafungin Phase 2 STRIVE trial to compare the length of stay (LOS) on the ICU and associated costs for people with candidaemia or IC treated with rezafungin or caspofungin therapy.⁵
- Most European countries use diagnosis related groups (DRGs) to identify and pay for hospital admissions relating to specific conditions.⁶ Availability of data regarding admissions and costs varies, although ICU bed days are typically included as “ungrouped” or “unbundled” supplementary costs over and above the DRG hospital payment for a specific condition.
- ICU care in the United Kingdom (UK) is financed as an unbundled Healthcare Resource Group (HRG), meaning that a critical care patient can be assigned two DRG codes relating to their primary diagnosis and their ICU care. Adjustments are made for adults according to the number of organs supported.
- The UK tariffs for critical care are negotiated locally, although aggregate cost data are published by the National Health Service England (NHSE) for the whole range of services in *The National Cost Collection* (including critical care costs) enabling the direct payments to hospitals for ICU bed days to be determined, based on historic NHS data.⁷

METHODS

- STRIVE comprised a global, Phase 2, prospective, multicentre, double-blind, comparator study.
- Overall, 183 adults with candidemia and/or IC were randomised to receive rezafungin 400/400 mg (n=76), rezafungin 400/200 mg (n=46), or caspofungin standard dose (n=61) for ≤4 weeks.
- Day 5 overall cure and mycological success rates were evaluated and ICU LOS was reported for the full study period.
- ICU bed day cost was calculated as the pooled average of the reference National Average Unit Cost from the National Schedule of NHS Costs 2018/19.
 - The service code CCU01 (non-specific, general adult critical care patients predominate) was selected as the source for the pooled average because patients can be admitted to the ICU for multiple reasons (e.g. medical, surgical, emergency).
- Post-hoc analysis calculated projected ICU stay costs for rezafungin 400/200 mg and caspofungin groups based on a pooled average cost.

RESULTS

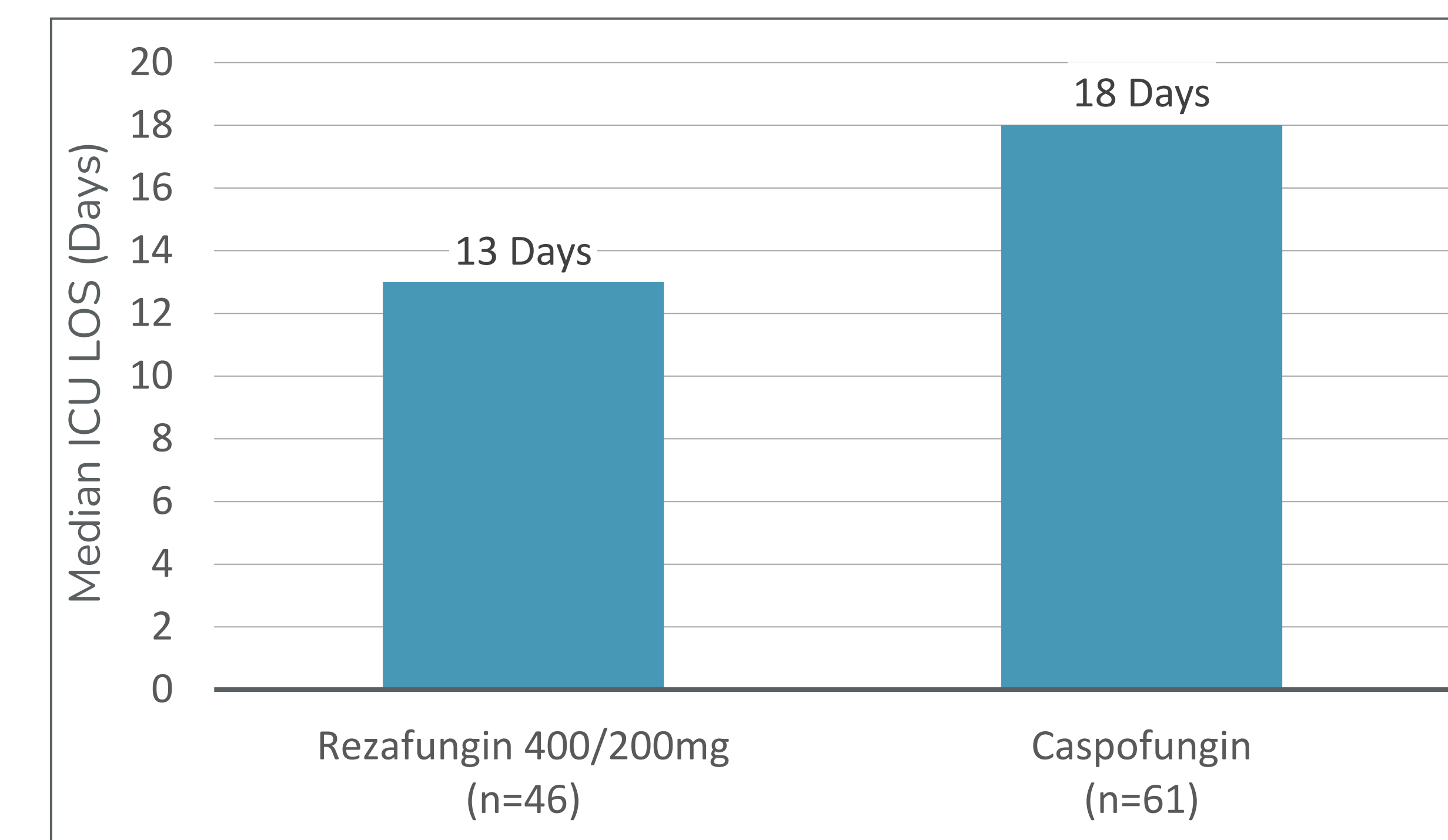
STRIVE trial clinical outcomes

- Day 5 overall cure rates were:
 - Rezafungin 400/200 mg: 73.9% (34/46).
 - Caspofungin (standard dose): 55.7% (34/61).

STRIVE trial LOS on the ICU

- At enrolment, 44% (80/183) of subjects were in the ICU, with a further 6% (11/183) admitted during the trial (microbiological intention-to-treat population).
- Figure 1 shows the median ICU LOS for discharged patients (excluding discharge due to death). Median ICU LOS in each group was:
 - Rezafungin 400/200 mg: 13 days (range 2–48 days).
 - Caspofungin (standard dose): 18 days (range 1–61 days).

Figure 1. Median ICU LOS for discharged patients (excluding discharge due to death)



Post-hoc analysis

- The pooled average ICU bed cost derived from the National Schedule of NHS Costs 2018/19 was £1,504/day (Table 1).
- For the UK healthcare system, the pooled average cost difference resulting from the 5-day reduction in ICU LOS with rezafungin 400/200 mg, versus standard caspofungin therapy, was -£7,520 per discharged patient.

Table 1. National Cost Collection: National Schedule of NHS costs (2018/19) for critical care (service code CCU01) across NHS trusts and NHS foundation trusts

Service Code	Service Description	Currency Code	Currency Description	Activity / Days	National Average Unit Cost
CCU01	Non-specific, general adult critical care patients predominate	XC01Z	Adult Critical Care, 6 or more Organs Supported	6,260	£2,281
CCU01	Non-specific, general adult critical care patients predominate	XC02Z	Adult Critical Care, 5 Organs Supported	26,050	£2,097
CCU01	Non-specific, general adult critical care patients predominate	XC03Z	Adult Critical Care, 4 Organs Supported	95,094	£1,967
CCU01	Non-specific, general adult critical care patients predominate	XC04Z	Adult Critical Care, 3 Organs Supported	194,953	£1,764
CCU01	Non-specific, general adult critical care patients predominate	XC05Z	Adult Critical Care, 2 Organs Supported	245,822	£1,575
CCU01	Non-specific, general adult critical care patients predominate	XC06Z	Adult Critical Care, 1 Organ Supported	338,820	£1,152
CCU01	Non-specific, general adult critical care patients predominate	XC07Z	Adult Critical Care, 0 Organs Supported	22,212	£933
Pooled Average					£1,504

CONCLUSIONS

- For the treatment of candidemia and IC, early treatment efficacy with rezafungin was demonstrated by numerical improvements in overall cure at Day 5 and a shorter ICU LOS.
- In the UK, these outcomes may translate to potential spending reductions concerning LOS in the ICU of approximately £7,520 per discharged patient.
- These exploratory findings will be further determined in the ReSTORE Phase 3 study.

References

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