

# Implementing Venetoclax Treatment into Day Case Setting for Patients at High Risk of Tumour Lysis Syndrome; University Hospital Southampton Experience



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## BACKGROUND

Patients requiring Venetoclax therapy are rapidly increasing across NHS hospitals. While complications during and after treatment are infrequent and generally not severe, in the first weeks of therapy there is a variable risk of tumour lysis syndrome (TLS), which may be fatal if not properly managed through the dose-escalation phase with adequate prophylaxis. The initial recommendation for patients at high risk of TLS was hospitalisation. However, this imposes a high turnover of admissions/discharges and personnel highly trained to manage any drug related complications, while being more costly. Administration of Venetoclax in a Day-case setting with specialised haematology personnel *i)* can reduce time of hospitalisation, *ii)* can reduce use of inpatient beds *iii)* can improve time spent on coordination and administration of Venetoclax.

## OBJECTIVES

We investigated the number of patients actually required admission to inpatient wards for TLS management, in order to address the following questions:

- how to minimise hospital stay
- how to improve patient's experience
- how to reduce the administrative workload around Venetoclax administration
- how to set up a safe and effective service with minimal risk for TLS
- Whether the Day-case setting is a safe way to deliver Venetoclax-based treatments

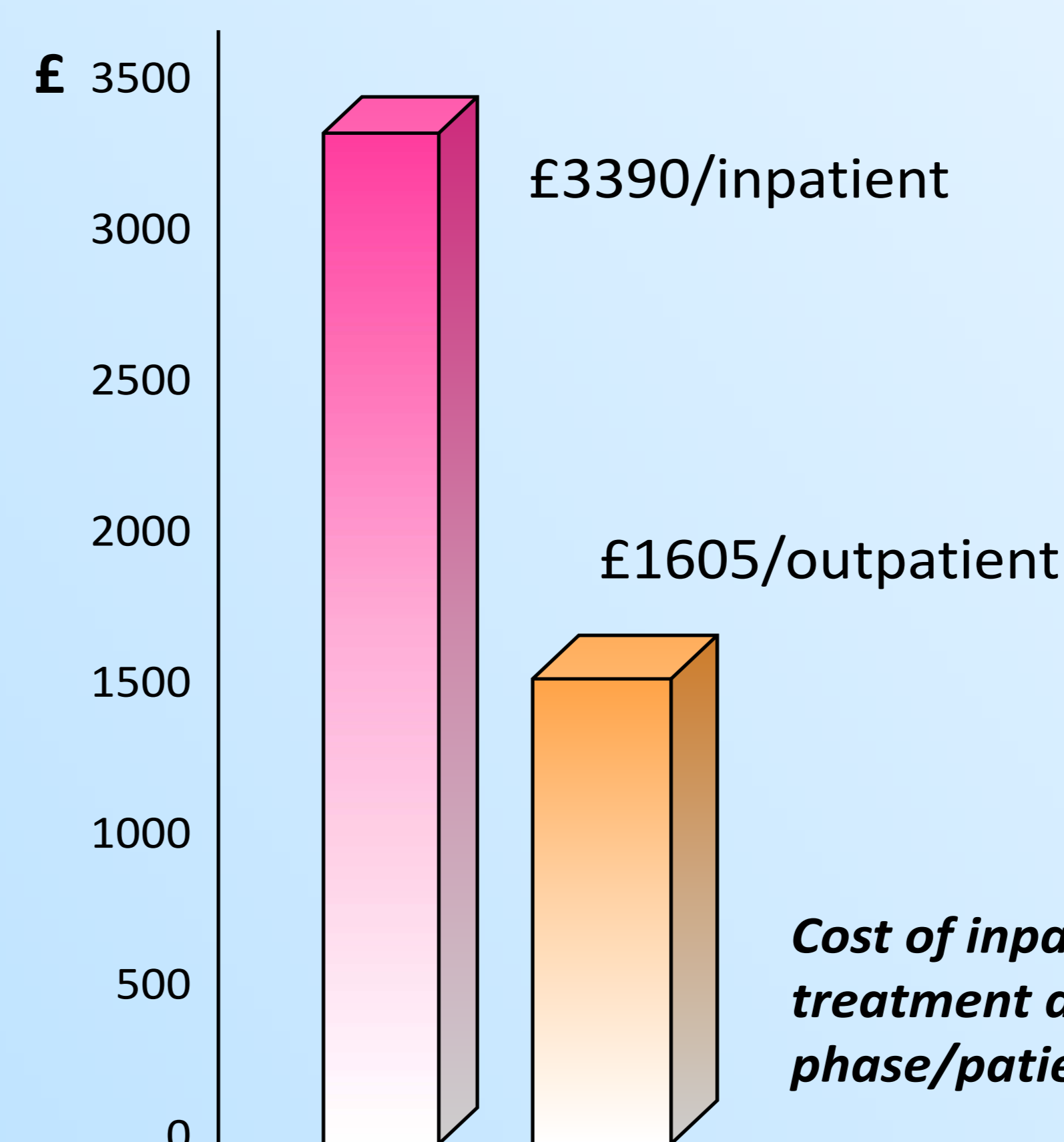
## METHODS

- We reviewed all the patients having commenced Venetoclax-based treatments on the Haematology Day Unit at the University Hospital Southampton NHS Foundation Trust (UHS) between Apr 2018 and Nov 2019 excluding patients receiving Venetoclax treatment on clinical trials.
- Primary endpoint was to quantify the number of patients actually admitted to hospital as inpatients for TLS management during dose escalation. Bishop's scoring system was used to distinguish TLS high-risk (including medium-risk) and low-risk patients. High risk management protocol included monitoring of potassium, uric acid, calcium, phosphate and creatinine in the serum and hydration, diuretics, ion-chelating agents or anti-hyperuricemia drugs according summary of product characteristics (SmPC) by the European Medicines Agency (EMA).

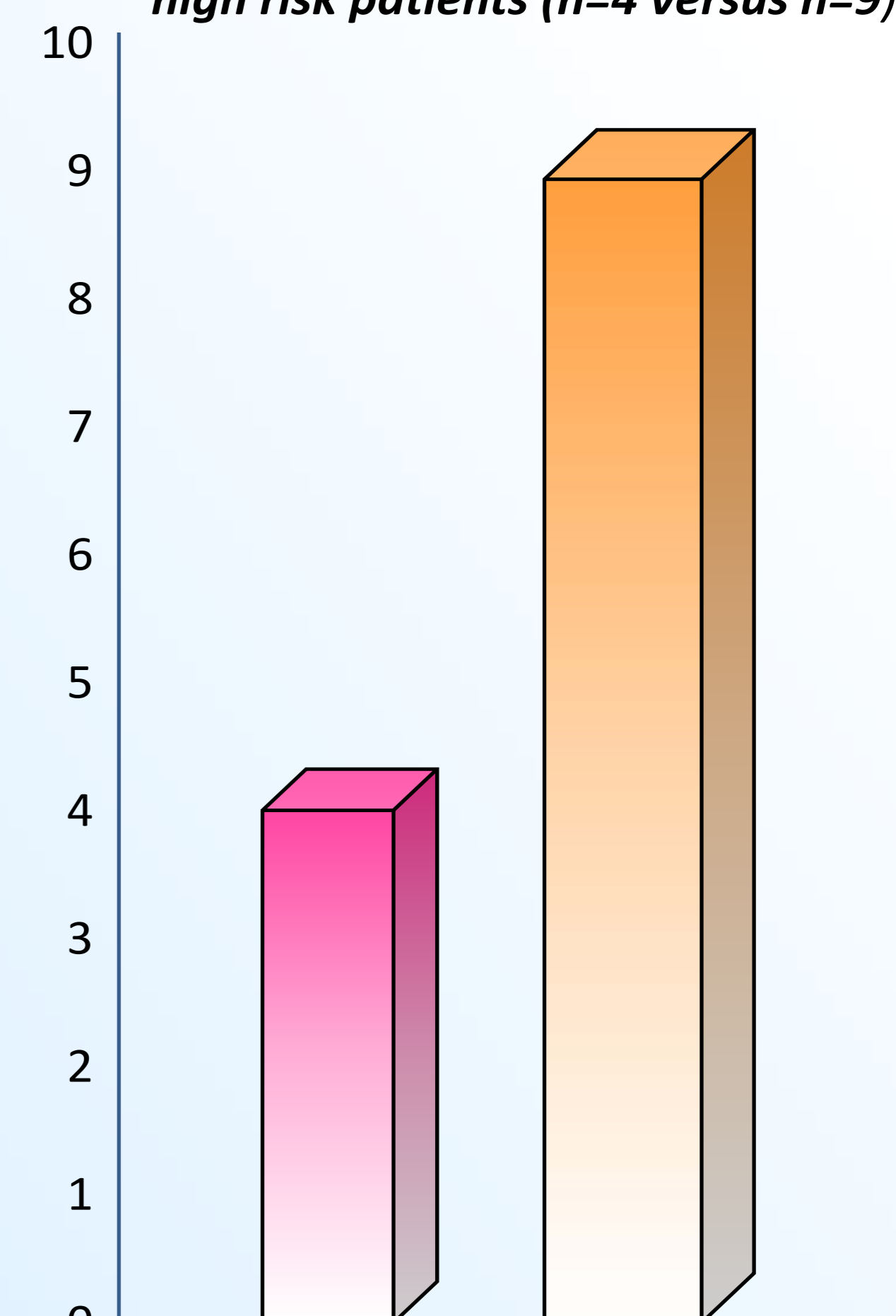
### Admission to hospital was according to primary carer judgement.

- Financial cost of treatment was calculated using the UHS hospital charges (day-case stay/patient/day = £107; In-patient admission/patient/night = £339).
- By analysing the costs of high-risk patients with potential indication for admission to in-patient wards (Hospital stay/patient = 2nights/week X 5weeks=10 nights X £339=£3390/patient) versus those who were treated in the Day Unit without admission to hospital (Day-case treatment/patient = 3 visits/week X 5weeks=15 visits X £107=£1605/patient), we calculated a potential save of £14,280 for our 8 high-risk patients, i.e. £178,500 every 100 patients receiving the 5 weeks of dose escalated Venetoclax therapy.

- A total of 13 patients (n=4 low-risk and n=9 high-risk) were identified. Only 1 of the 9 high risk patients required admission to hospital. Although grade 2 hyperphosphatemia was documented, this specific patient was admitted because of a severe acute distress syndrome caused by Haemophilus influenza infection.
- Other patients experienced a laboratory grade 1-2 TLS syndrome which resolved using our internal TLS protocol without extension of hours of chair occupation, opening time of Day Unit service or involvement of additional administrative, nursing or medical staff.



Number of low risk patients versus high risk patients (n=4 versus n=9)



Number of admission of high risk patients (n=1 of n=9)



## CONCLUSION

We find that high-risk patients rarely require inpatient admission to hospital and that an accurate review of the medical history might be sufficient to anticipate need of admission. None of our patients required admission to hospital for TLS, while treatment of high-risk patients in the Day Unit is easily feasible and significantly less expensive than admission to hospital for tablet medications. In light of our results, we have modified our internal policies and take the following actions:

- revision of treatment protocols in the high-risk and low-risk patients
- writing of detailed nursing guidelines
- regular provision of teaching to Day Unit personnel, including Haematology Consultants, doctors in training and nurses

**We find that our Day Unit is now ready to provide safe and efficient environment to patients receiving Venetoclax-based treatment and we feel Day Case setting is the way forward for many of our future patients.**