**Title:** Factor concentrate treatment for haematuria in people with haemophilia is associated with low rates of complications

**Background and Aim:** Evidence guiding optimal management of haematuria in people with haemophilia (PWH) is scarce. There has been concern that treating haematuria with factor concentrates may contribute to development of ureteric obstruction. This retrospective review was designed to contribute to the available contemporary data regarding optimal management of haematuria in PWH, including underlying aetiology, complications and outcomes.

**Method:** This single-centre retrospective observational study was conducted at the State Haemophilia Treatment Centre in Victoria, Australia. We identified 28 haemophilia patients admitted with haematuria using ICD codes, between January 2012 and December 2020. Data regarding demographics, severity, aetiology, treatment, and complications was collected and analysed. The median follow-up was 62 months from initial diagnosis.

**Results:** The baseline characteristics of our population are shown in Table 1. Three (10.7%) patients experienced major bleeding as per ISTH definition, and an underlying cause was found in 13 patients (46.4%), of which ureteric calculi were most common. The median duration of haematuria and length of stay (LOS) in hospital were both 5 days. Those receiving regular prophylaxis had a slightly shorter duration of haematuria (5.0 vs 6.0 days, p=0.74) and LOS (2.5 vs 6.5 days, p=0.06) compared to those receiving on-demand. While treatment of the haematuria with factor replacement did not reduce LOS (4.0 vs 5.0 days, p=0.64) or duration of haematuria (5.0 vs 5.0 days, p=0.44), there were few complications, in particular rates of ureteric obstruction or clot retention (1 patient that received factor, 2 that did not). Patients with more comorbidities (>/=2) had longer LOS (10.0 vs 4.0 days, p=0.12) and haematuria duration (8.0 vs 4.0, p=0.12).

**Conclusion:**Treatment of haematuria with factor concentrates appears to be safe with low rates of complications among PWH presenting with haematuria. The strongest predictor of LOS and duration of haematuria is the number of comorbidities.

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|  | n | (%) |
| Type of haemophilia |  |  |
| Haemophilia A | 19 | (67.9) |
| Haemophilia B | 9 | (32.1) |
| Total | 28 |  |
| Severity |  |  |
| Mild (>5%) | 8 | (28.6) |
| Moderate (1-5%) | 2 | (7.1) |
| Severe (<1%) | 18 | (64.3) |
| Age, years *Median (IQR)* | 34.5 (25-58.3) |  |
| Sex |  |  |
| Male | 27 | (96.4) |
| Female | 1 | (3.6) |
| Regular Haemophilia Treatment |  |  |
| Prophylaxis | 14 | (50.0) |
| On Demand | 14 | (50.0) |
| Inhibitor Present |  |  |
| Yes | 4 | (14.3) |
| No | 24 | (85.7) |
| Comorbidities |  |  |
| Smoking | 3 | (10.7) |
| Hypertension | 3 | (10.7) |
| IHD | 3 | (10.7) |
| Diabetes | 1 | (3.6) |
| CKD | 1 | (3.6) |

**Table 1: Baseline characteristics**