

# Intra-Vesical Gentamicin (IVG) installations improves QoL and reduces micro-organism resistance in patients with recurrent UTIs

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### Background & Aims

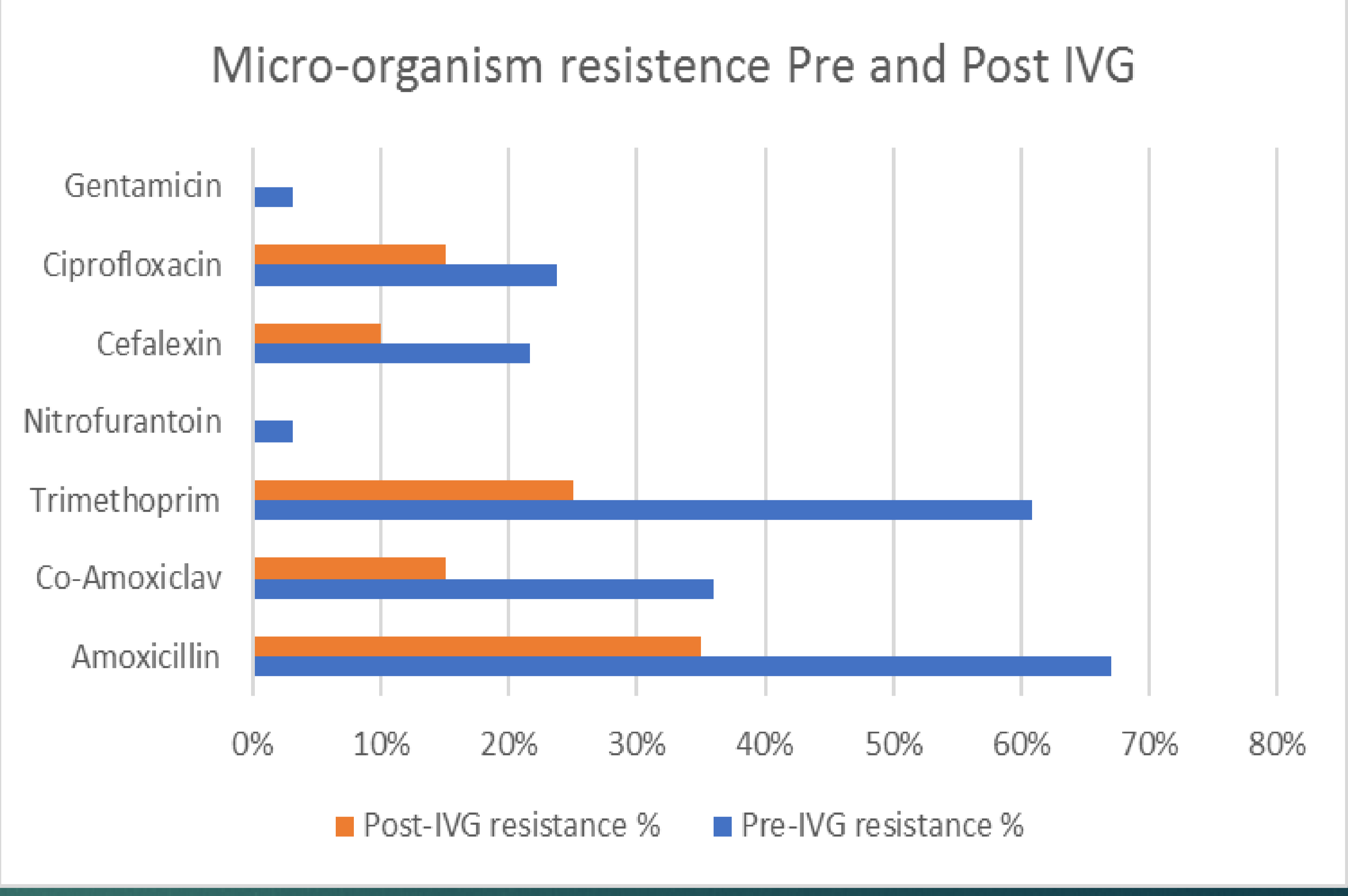
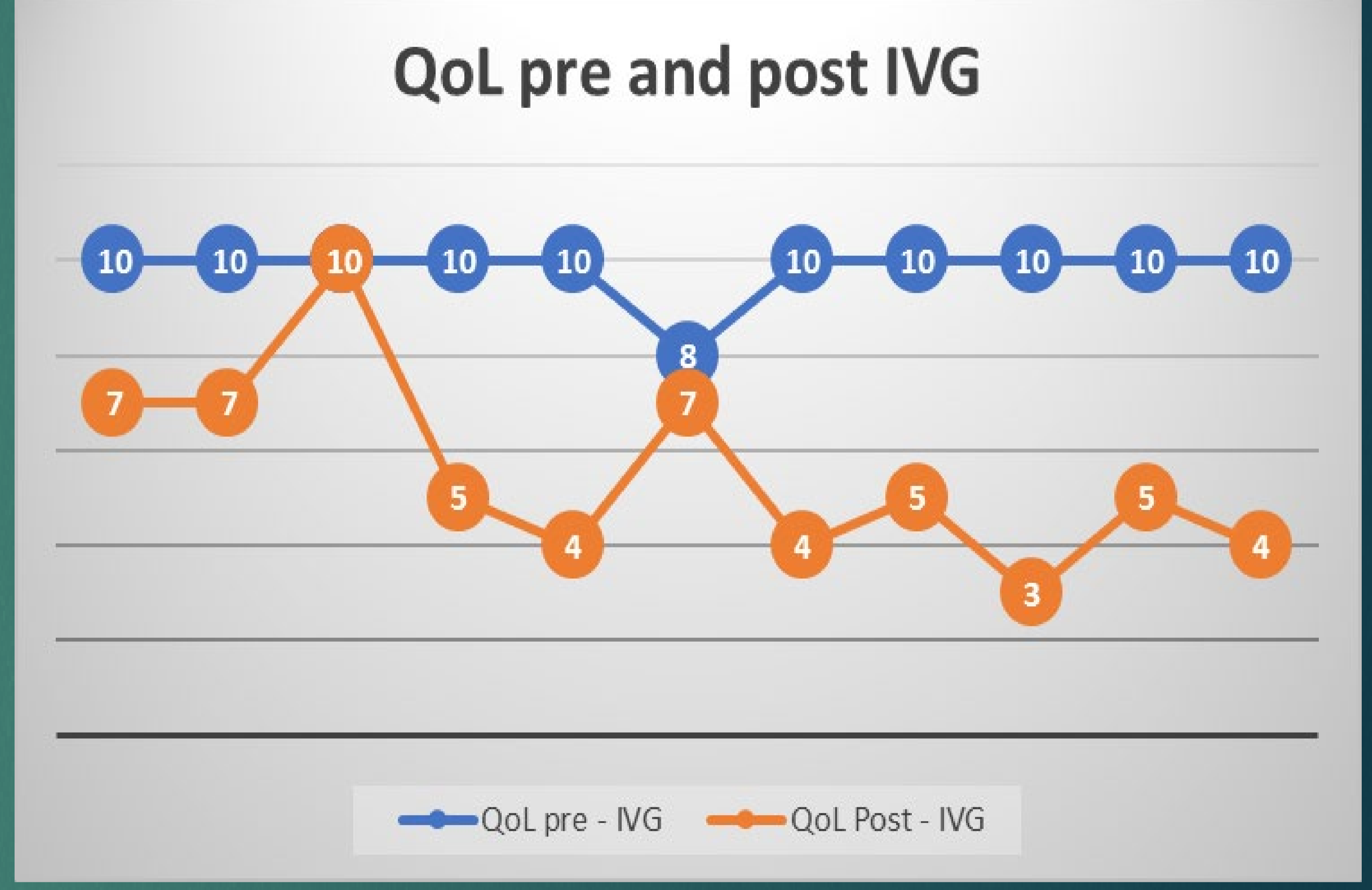
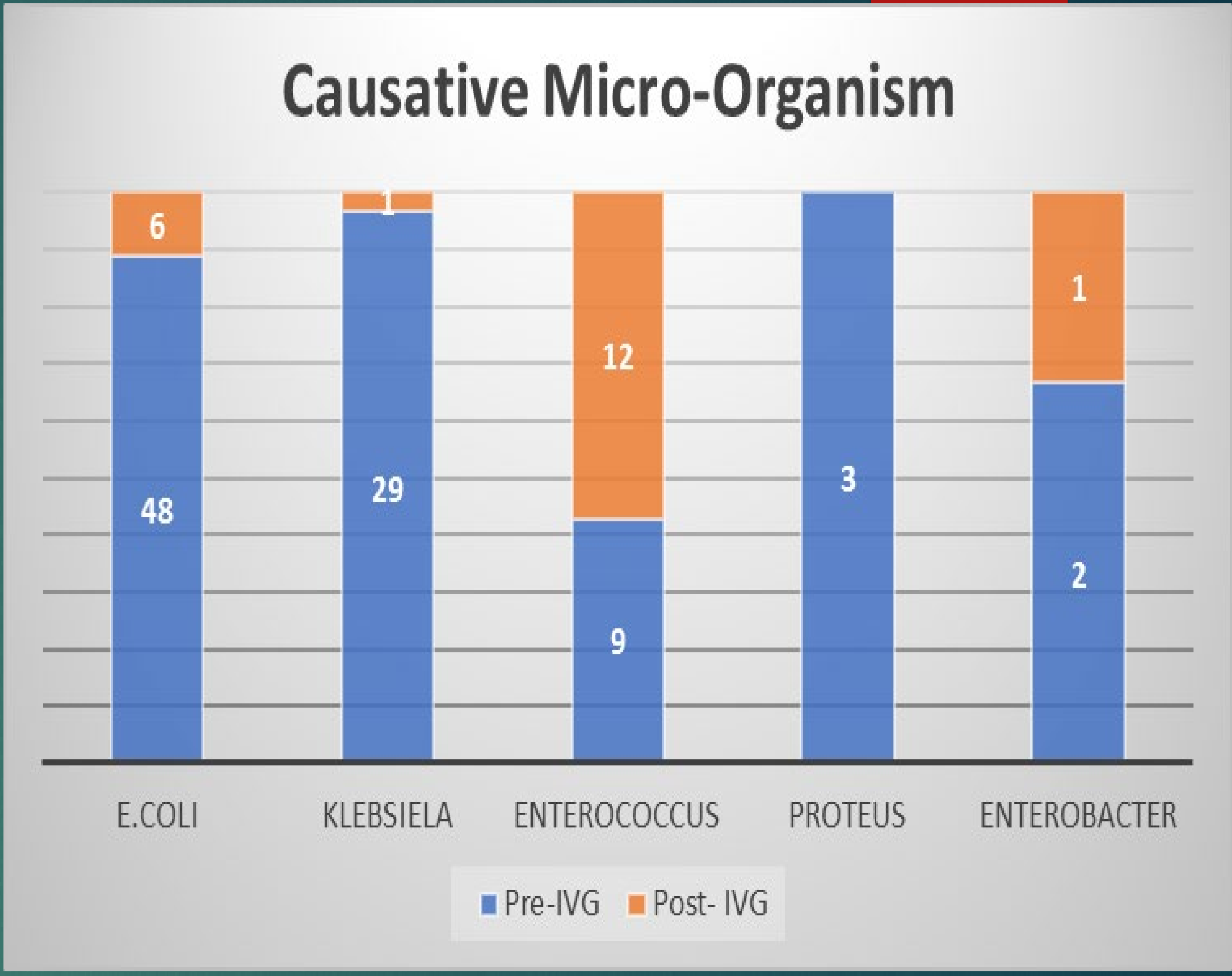
Recurrent [r] UTIs can be challenging to manage if there are no structural or functional urological cause identified. In the case of rUTIs, several prophylactic measurements are taken to prevent these infections from occurring such as lifestyle modifications, prophylactic antibiotics and the installation of intra-vesical substances. rUTIs have a detrimental effect on patient QoL<sup>[1]</sup>, put them at risk of developing potentially life-threatening urosepsis and increases micro-organism resistance to antibiotics which is becoming a global issue. The aims of the study were to assess if using Intra-Vesical Gentamicin (IVG) could improve QoL by reducing pelvic pain, reduce the recurrence of UTIs and assess the effects on micro-organism resistance.

### Materials & methods

A treatment protocol was developed and agreed by the local Clinical Effectiveness Committee and 11 patients were identified as suitable for this prospective study. Inclusion criteria included those who failed all conventional treatments for rUTIs. Clinical data was available for the twelve months before and a variable period after initiating prophylactic IVG installations. All patients had at least 6 symptomatic UTIs (+ve MSU and requiring treatment with Antibiotics (Abx)) or at least one admission with urosepsis requiring Intra-Venous (IV) Abx. All patients were consented to this off-licence use of IVG. A single nightly instillation of 80 mg Gentamicin diluted in 50 ml of 0.9% normal saline was prescribed. Serum Gentamicin levels were checked 7 days post-treatment. If levels were >1.0 mg/L treatment was be discontinued (all patients were < 1.0 mg/L). Daily instillations were reduced in frequency over subsequent months dictated by response. We reviewed all positive urine samples pre & post-IVG and documented causative micro-organisms and their sensitivities and resistance.

### Results

11 patients were included (ten females, one male) with an average age of 45 (70-22), average BMI: 23.6 (29-17) and average treatment period: 7 months (2-18). All patients were independent in administration.  
 -10 out of 11 (91%) had an improvement in their pelvic pain & rate of rUTI  
 Comparing pre and post IVG results, there was improvement in:  
 - Pain scores 9.8/10 to 5.1/10  
 - Number of symptomatic UTIs reduced from 8.3 to 1.8  
 - Fewer admissions for intravenous ABx (mean 1.45 to 0.36)  
 - Fewer multi-drug resistant organisms after IVG (mean 7.38 vs. 1)



### Conclusion

We have identified that IVG reduces the frequency of UTIs, can be administered safely and reduces micro-organism resistance or in the very least does not increase it. We intended to recruit more suitable patients and continue long follow up to assess IVG effectiveness further.

[1]: Recurrent Lower Urinary Tract Infections Have a Detrimental Effect on Patient Quality of Life: a Prospective, Observational Study. *Infect Dis Ther.* 2015 Mar; 4(1): 125-135. PMID: [25519161](https://pubmed.ncbi.nlm.nih.gov/25519161/).