

## Intra-vesical gentamicin (IVG) installations improve QoL, reduces the frequency of UTIs and reduce micro-organism resistance in patients with intractable recurrent UTIs

Eur Urol Suppl 2019; 18(1);e116

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**Introduction & Objectives:** Recurrent [r] UTIs can be challenging to manage if there is no structural or functional urological cause identified. In the case of rUTIs, several prophylactic measurements are taken to prevent these infections from occurring ie. lifestyle modifications, prophylaxis antibiotics, and installation of intra-vesical substances. Recurrent UTIs have a detrimental effect on patients QoL<sup>[1]</sup> and put their lives at risk with urosepsis. The study aimed to assess if using IVG could improve QoL by reducing pelvic pain, reduce the recurrence of UTIs and assessing 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 were those who failed all conventional treatments for rUTIs with clinical data available twelve months before and a variable period after initiating prophylactic IVG installations. All patients had at least six symptomatic UTIs (+ve MSU and requiring treatment with Antibiotics (Abx)) or at least one admission with urosepsis needing Intra-Venous (IV) Abx. All patients consented to this off-license use of IVG. A single nightly installation of 80 mg Gentamicin diluted in 50 ml of 0.9% Normal Saline was instigated. Serum Gentamicin levels were checked seven days post-treatment. If levels were >1.0 mg/L treatment had to be discontinued (all patient levels were <1.0 mg/L). Daily instillations were reduced in frequency over subsequent months dictated by response.

**Results:** Eleven 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. Overall 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 and number of symptomatic UTIs reduced from 8.3 to 1.8. There were fewer admissions for intravenous ABx (mean 1.45 to 0.36) and fewer multidrug resistance organisms after IVG (mean 7.38 vs. 1).

Antibiotic	Pre-IVG resistance %	Post-IVG resistance %
Amoxicillin	67%	35%
Co-Amoxiclav	36%	15%
Trimethoprim	60.8%	25%
Nitrofurantoin	3.1%	0%
Cefalexin	21.6%	10%
Ciprofloxacin	23.7%	15%

Gentamicin	3.1%	0%
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**Conclusions:** We have concluded that IVG improves QoL, reduces the frequency of UTIs, can be administered safely and reduces micro-organism resistance or at least not increasing it. A sizeable number of patients and more extended follow up period is required 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](#).