

P0318

Effectiveness of non-surgical therapies in the treatment of non-sickle cell disease-related ischemic priapism - findings from a systematic review

Eur Urol;79(S 1):S461

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Introduction & Objectives: The initial management of ischaemic priapism (IP) usually includes conservative treatments but the evidence to support their efficacy and safety is lacking. We performed a systematic review (SR) of the available literature to evaluate the outcomes of non-surgical management for non-sickle cell disease-related (NSCD) IP.

Materials & Methods: A SR was conducted on behalf of the EAU Guidelines on Sexual&Reproductive Health panel and according to PRISMA-guidelines. We included randomised trials, case-control studies and case series with >=5 participants on non-surgical management of NSCD IP up to 2020. Intervention types included: Conservative methods (CM) (exercise, ejaculation, ice packs, cold bath), corporeal aspiration (CA), corporeal irrigation (CI) with saline, intracavernosal sympathomimetic (ICS), pharmacological interventions (terbutaline, salbutamol, ketoconazole, others). The primary outcome was resolution of acute IP and secondary outcomes were frequency of erectile dysfunction (ED) and side effects (SEs). Risk of biases (RoB) was assessed.

Results: In total, 2,626 identified studies were screened and 43 studies fulfilled the inclusion criteria. RoB was in general high and the number of study participants was low (range 5-136). Most frequently investigated treatments were CM (N=12 (28%) studies); ICS (N=22 (51%)); CA

(N=9 (21%)) and CI (N=7 (16%)) (Table 1). Reported IP resolution rates were highly variable: 1-60% for CM, 0-100% for ICS, 0-100% for CA and 70-100% for CI, respectively. Overall, need for surgical treatment was reported in 0 to 30% of cases. Post-treatment sexual function was investigated in 12 (28%) studies and ED was reported in 16 to 92% of cases. SEs were investigated in 15 (35%) studies and only mild SEs were reported, ranging from 0 to 100% of cases.

Treatment type	Number of studies	Number of patients treated per study (range)	Reported success rate (range)
Conservative methods	12	4-122	1-60%
Conservative methods + corporeal aspiration + irrigation	2	12-14	10%
Conservative methods + intracavernosal sympathomimetic	1	2	30%
Conservative methods + other pharmacological treatment	1	14	100%
Corporeal aspiration	9	1-71	0-100%
Corporeal irrigation	7	1-70	70-100%
Corporeal aspiration + irrigation	5	4-46	0-20%
Corporeal aspiration + other pharmacological treatment	1	9	NR
Intracavernosal sympathomimetic	22	1-44	0-100%
Corporeal aspiration + Intracavernosal sympathomimetic	3	8-72	60-100%
Corporeal aspiration + irrigation + Intracavernosal sympathomimetic	4	7-119	80%
Oral terbutaline	3	24-34	30-50%
Oral salbutamol	1	32	60%
Ketoconazole	1	12	100%
Epidural	1	1	NR
Other pharmacological treatment	7	1-25	30%

Conclusions: Current literature on the non-surgical management of NSCD IP is limited by significant heterogeneity and most studies represent small case series. CM, CA, CI and ICS are the most commonly investigated ways of management with a large variability in terms of treatment effects and safety parameters.