Increased nocturnal penile tumescence in the acute phase after nerve-sparing radical prostatectomy with “early” administration of low-dose tadalafil is correlated with further erectile function rehabilitation

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Aim of rehabilitation programs after nsRP

Smooth muscle atrophy
Rehabilitation of erection after nerve-sparing surgery

Critical time

SMSNA Annual Fall Scientific Meeting, November 03-06, 2016, Scottsdale
Alterations in Corpus cav. after RP

pre OP

2 month after RP

Increase of collagen fibres (p<0.0003)

Decrease of elastic fibres (p<0.0003)

(Iacono F et al., J Urol 2005)
Pathophysiology and rehabilitation of erectile function after nsRP


ns radical prostatectomy

erection

PDE 5 Inhibitor (Prostaglandine E 1)

preservation NVB’s

rehabilitation

apoptosis + fibrosis

penile pO₂

NPT

apoptosis + fibrosis

erection

penile pO₂

NPT
# Concepts of rehabilitation after nsRP in Germany

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Daily or ≥ 3x/week</th>
<th>“On Demand“</th>
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</thead>
<tbody>
<tr>
<td>PDE-5-I.</td>
<td>88%</td>
<td></td>
</tr>
<tr>
<td>ICT/SKAT</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>VED</td>
<td>32%</td>
<td>30%</td>
</tr>
<tr>
<td>MUSE</td>
<td>6%</td>
<td></td>
</tr>
</tbody>
</table>

Bannowsky et al., Urologe 2013

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Concepts for rehabilitation after RP in Germany

- **39 (!!)** different concepts
- **88 %** PDE 5-I. (sildenafil, tadalafil, vardenafil)
  - **55 %** on a regular basis (daily / ≥3x/week)
  - **45 %** “on demand”
- **56 %** start immediately / early postop.
- **46 %** until “potency”
- **14 %** no “active” rehabilitation
Methods (I)

- patients (n=24)
- Age: 63.9 years (57-72 years)
- preop sexual „active“
- IIEF-5 (baseline)
Methods (II)

Nerve-sparing radical prostatectomy (n=24)

Group 1 ("early") n=12:
5mg tadalafil /d
start 3rd POD

Group 2 ("delayed") n=12:
5mg tadalafil /d
start 8th POD

Group 1 / Group 2 comparable: baseline-IIEF, age and ns-status
Methods (III)

NPTR after removal of the transurethral catheter (8th POD)

↓

nightly spontaneous erections

group 1 and 2

↓

5mg tadalafil /d

F/u: IIEF-5 at 3, 6 and 12 months after nsRP
NPTR-measurement

64-years old pat, after bilateral nsRP, preop IIEF Score: 23
NPTR-recordings „early“ vs. „delayed“ 5mg tadalafil in the acute phase after nerve-sparing radical prostatectomy (n=24)

Mean NPTR-recordings, erections/night after catheter removal

* p<0.05

Group 1 („early“)
Group 2 („delayed“)

„early“ tadalafil 5mg start 3rd POD
„delayed“ tadalafil 5mg start 8th POD

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Results (IIEF-5)

IIEF-5 follow-up 12 months

- "early" Tad
- "delayed" Tad

* * p<0.05
Conclusions

“Early” low dose tadalafil leads to an increase of NPTR in the acute phase after nsRP compared to a “delayed” administration of PDE5-inhibitors and is significantly correlated with further EF recovery 1 year after nsRP.

- optimal dose ???
- „daily dosing“ vs „other strategies“ ???
- initiation of rehab „pre-“ vs „post-OP“ ???