

## SURVIVAL OF THE ARTIFICIAL URINARY SPHINCTER IN A CHANGING PATIENT POPULATION

### Hypothesis / aims of study

The aim of the study was to determine the functional survival of the artificial urinary sphincter (AMS800) in different patient populations. We hypothesized that patients with known risk factors for failure who underwent placement of an AMS800, nowadays have a better survival of their prosthesis, because of increasing experience and dexterity of the operating team.

### Study design, materials and methods

We included all men who underwent placement of an AMS800 between January 2001 and October 2016 because of sphincter deficiency. Patients were divided into three groups based on the operating period: 2001-2009 (G1), 2010-2013 (G2) and 2014-october 2016 (G3). Risk factors for failure of the AMS800 were analysed in the three groups. Kaplan-Meier curves were used to estimate the survival of the device without needing explantation or revision. Revision or explantation of the AMS800 was used as endpoint.

### Results

A total of 129 patients (72 ± 9 years) underwent 308 procedures: 129 primary implants, 11 secondary implants, 168 revisions of one or more components of the AMS800.

Median follow up was 2097 days in the group 2001-2009, 1192 days in the group 2010-2013 and 561 days in the group 2014-october 2016.

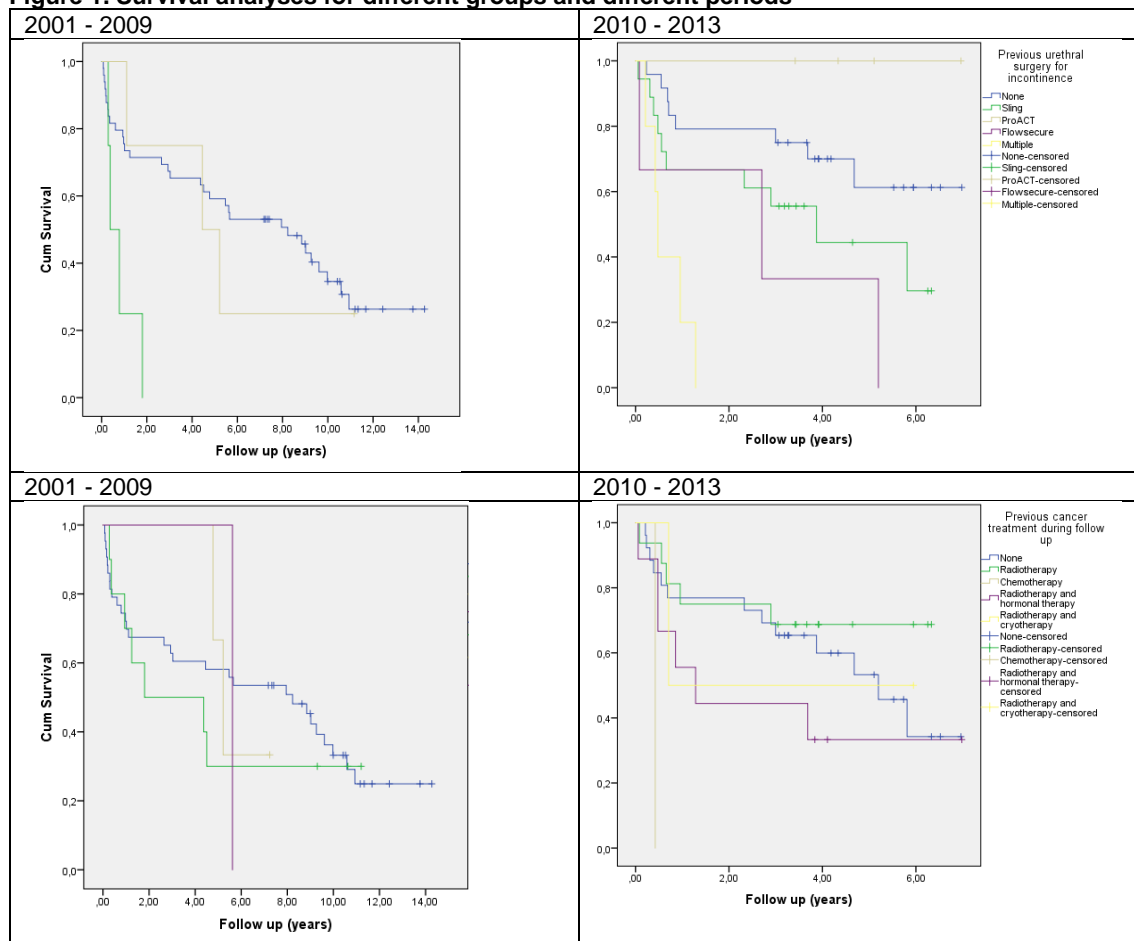
Approximately 25% of the patients in G1 had had additional therapy for prostate cancer and 14% had had previous surgery for incontinence. In G2 51% and 55% underwent additional therapy for prostate cancer and previous surgery for incontinence respectively. In G3 we found an almost stable number of patients who had had additional therapy for prostate cancer, 45% and previous urethral surgery, 45% respectively.

The revision-free estimated survival of the artificial urinary sphincter was higher if correction for risk factors was performed. (Figure 1.) This could only be done for G1 and G2 because of the smaller sample size of G3 and the shorter period of follow up.

**Table 1. Baseline characteristics of 140 sphincters**

	2001-2009 n= 57	2010-2013 n= 54	2014-2016 n=29
<b>Adjuvant therapies</b>	<b>25%</b>	<b>52%</b>	<b>45%</b>
<i>Radiotherapy</i>	17,5%	29,6%	27,6%
<i>Chemotherapy</i>	1,8%	1,9%	-
<i>Hormonal therapy</i>	5,3%	16,7%	17,2%
<i>Cryo therapy</i>	-	3,7%	-
<b>Previous urethral surgery</b>	<b>14%</b>	<b>55%</b>	<b>45%</b>
<i>Sling</i>	7%	33,3%	34,5%
<i>Flowsecure</i>	-	5,6%	-
<i>ProAct</i>	7%	7,4%	3,4%
<i>Multiple</i>	-	9,3%	6,9%
<b>Diabetes Mellitus</b>	17%	17%	17%
<b>Endoscopic urethrotomy</b>	16%	17%	10%

**Figure 1. Survival analyses for different groups and different periods**



**Interpretation of results**

Over the past few years there is a change in patient population who underwent AMS800 implantation (table 1.). Nowadays patients have undergone more adjuvant therapies or previous urethral surgery before implantation of an AMS800. This also reflects the overall survival, however if we correct in both groups for risk factors survival improved in 2010-2013 comparing to 2001-2009 (Figure 1.). For example patients who underwent radiotherapy or urethral surgery (e.g. a male sling) previous to implantation of an AMS800 had a better outcome in 2010-2013.

**Concluding message**

Despite the changing patient population, the survival of the artificial urinary sphincter is not decreasing. In some patient categories (previous radiotherapy or a male sling) the AMS800 function survival is even still improving over the past few years.

**Disclosures**

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