SNORING & OSAHS SURGERY

International Workshop

FOLLOW UP & OUTCOMES EVALUATION

< 15’
FOLLOW UP

✦ Why?
✦ When?
✦ How?
Why Follow Up?

- It’s a mandatory step in any type of therapy in Medicine
- From the patient’s point of view a complete follow up evaluation is crucial for avoiding a possible subclinical residual disease or a recurring disease
- From the surgeon’s point of view the outcomes data are very useful for refining the treatment protocol in the future

When? - Our Schedule for Post Op Evaluations

- Within One Month: Clinical evaluation of complete functional recovery
- Six Months: First clinical & PSG examination, first evaluation of success
- Every year: Clinical general evaluation, PSG if required (recurrence ?)
OUTCOMES in LITERATURE

Sher’s Criteria

<table>
<thead>
<tr>
<th>Group I of paper</th>
<th>Group II of paper</th>
<th>Group III of paper</th>
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<tr>
<td>very large changes in AI, RDI, and minimum oxygen saturation (Min O2Sat) were all highly significant</td>
<td>14 defined response as a 50% decrease in AI</td>
<td>There were no statistically significant differences between responders and non responders</td>
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<tr>
<td>16 defined response as a 50% drop in RDI and five defined responses as some other definition</td>
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<tr>
<td>Response was defined as a postoperative RDI of less than 20 and at least a 50% postoperative reduction in RDI</td>
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TONGUE OPERATION

With response defined as a reduction in RDI of at least 50%, the response rate was 41.7%

Response was defined as a postoperative RDI of less than 20 per hour and at least a 50% reduction from preoperative RDI. Seventy-seven percent of patients (17/22) were responders.

MMA

The likelihood of response tended to diminish with increasing preoperative apnea severity as follows: i) for patients with a preoperative RDI of less than 20, the response rate was 76.9% (20/26); ii) for patients with a preoperative RDI of 20 to 40, the response rate was 77.6% (45/58); iii) for patients with a preoperative RDI of 40 to 60, the response rate was 70.6% (36/51); iv) for patients with a preoperative RDI of greater than 60, the response rate was 42.3% (44/104).

Response was defined by a postoperative (at 6 months) RDI of less than 20, representing at least a 50% reduction from preoperative RDI, and the lowest oxygen saturation equivalent to that of a second night of CPAP titration.
Judging Success

Many define as 50% decrease in RDI and RDI < 20
Objective assessment of response – post-treatment polysomnogram is crucial

PERSONAL EVALUATION

According to Our Data
Outcomes
according to Sundaram & Coll., The Cochrane Collaboration, 2007, modif

PRIMARY

✧ AHI (Apnoea Hypopnea Index)
✧ ESS (Epworth Sleepiness Scale)
✧ Snoring (Visual Analogue Scale)

SECONDARY

✧ Visual Analogue Scale-VAS (satisfaction)
✧ Complications (type & rate)
✧ Withdrawls
✧ Postoperative Morbidity
✧ Postoperative Mortality
✧ One Year Mortality
✧ Neuropsychological Functions
✧ QOL SF36
✧ Choking abolition

How we describe the outcomes
Success Area of Snoring Reduction

Visual Analogue Scale of Snoring Reduction

ESS

OSAS threshold

Cardio-vascular Risk threshold

Neuro-psyologic axis

EDS threshold

OSAS none mild moderate severe

UARS Sleepy OSAS

Simple snorers Not Sleepy OSAS

Choking OSAS

Cardio - respiratory axis
OSAS threshold
Cardio-vascular Risk threshold

ESS

OSAS
none          mild         moderate        severe

UARS
Sleepy OSAS
Choking OSAS
Not Sleepy OSAS
Simple snorers

Neuro - psychologic axis

EDS threshold

Cardio - respiratory axis

5       10                          20                         30   AHI

AHI
OSAS Cardio-vascular Risk threshold

OSAS none               mild                moderate      severe

threshold

Risk threshold

idid

improved

CV prevented

success

OSAS cured

worsened

unchanged

5               10                          20                          > 30   AHI

ESS
OVERALL PSICOLOGICAL APPROACH

Addictional Data for Follow Up
THE PSYCHOLOGICAL BATTERY WERE PERFORMED AT PT (Pre Treatment) AND AT (After Treatment), THAT CONSIST OF:

- 1) EPWORTH SLEEPINESS SCALE (E.S.S.): a self report scale to evaluate the subjective daytime somnolence
- 2) CENTER FOR EPIDEMIOLOGICAL STUDIES DEPRESSION SCALE (CES-D): a self report scale (16 items), to evaluate depressive symptoms
- 3) PERCEIVED STRESS QUESTIONNAIRE (PSQ): a self report scale (30 items) to evaluate the perceived stress level

- SF-36 ITEM SHORT FORM MENTAL HEALTH SURVEY (quality of life questionnaire; a self-reported scale to evaluate 8 domains: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, mental health)
- POST-OPERATIVE PAIN: VERBAL NUMERIC SCALE (VNS) (only at)
  a standard 0 (no pain) to 10 (severe pain) scale used to subjective evaluate pain and suffering after surgery. This scale is compiled every day during the hospitalization
- A QUESTIONNAIRE CONCERNING SELF-PERCEIVED OF SYMPTOMS (sleepiness, work performances, attention, concentration, manual dexterity, social problems, family’s problems, sexual difficulties), stimulants’ consumption (cigarettes, coffee, the, coca cola), accidents in the last six months.
Computer-assisted neuropsychological testing for vigilance, visual and auditory alertness, selective attention

NEUROPSYCHOLOGICAL CHANGES AFTER SLEEP DISORDERED BREATHING SURGERY IN OSHAS
100 OSAHS PATIENTS (MEAN RDI 32.4; SAO2 79.2)
Phase I or Phase II

compared to

100 AGE-MATCHED NORMAL CONTROLS*
Not SDB Surgery

BEFORE AND 6 MONTHS AFTER SURGERY

*Not OSAHS surgical patients admitted to Department for not SDB surgical procedures

Sample Characteristics

![Sample Characteristics Chart]

- **AGE**
  - OSAHS: 43.72
  - CONTROLS: 48.61

- **GENDER**
  - OSAHS:
    - M: 89%
    - F: 11%
  - CONTROLS:
    - M: 59%
    - F: 41%
MEASUREMENTS

The Psychological Battery were performed at PT (Pre-Treatment) and PO (Post-Operation):

1. Epworth Sleepiness Scale (E.S.S.)
2. Center for Epidemiological Studies Depression Scale (CES-D)
3. Perceived Stress Questionnaire (PSQ)
4. Illness Behaviour Questionnaire (IBQ)
5. PC Assisted Neuropsychological Testing for vigilance, visual and auditory alertness, selective attention
6. Questionnaire for self-perception of symptoms (sleepiness, work performances, attention, concentration, manual dexterity, social problems, family’s problems, sexual difficulties), stimulants’ consumption (cigarettes, coffee, the, coca cola), number of accidents in the last 6 months.

RESULTS

![Graphs showing RDI and E.S.S. results](image-url)
RESULTS

Significative improvements for OSAHS patients, in:

- EDS (ESS: p<0,0001)
- Depression (CES-D: p<0,0001)
- Perceived Stress (PSQ: p=0,0111)
- Vigilance (p=0,0023)
- Selective attention (p<0,0001)
- Number of daily cigarettes and coffee (p=0,0014; p<0,0001)
- Self-perceived manual dexterity (p<0,0001)
- Social problems (p>0,0001)
- Family’s problems (p<0,0001)
- Sexual difficulties (p<0,0001)

QUALITY OF LIFE

SF36
TORS QoL SF36 evaluation

Thank You for your invitation and for your incredible attention!

Arrivederci !!!
THANK YOU FOR YOUR ATTENTION and ...