HYPERHIDROSIS: THE PEDIATRIC PERSPECTIVE

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DISCLOSURE

• RESEARCH: ALLERGAN, DEMIRA ; ALL FUNDS PAID TO UTHEALTH McGOVERN MEDICAL SCHOOL

• ADVISORY BOARD: ALLERGAN, DEMIRA
WHY CONSIDER THE PEDIATRIC POPULATION UNIQUE IN THE REALM OF HYPERHIDROSIS?

- AGE OF ONSET
- ANATOMIC DISTRIBUTION OF SWEATING
- IMPACT ON:
  - SCHOOL
  - DEVELOPMENT OF SELF CONFIDENCE
  - LIMITED THERAPIES APPROVED
PRIMARY PEDIATRIC HYPERHIDROSIS: A REVIEW OF CURRENT TREATMENT OPTIONS

GELBARD C, EPSTEIN H, HEBERT AA
SPECIAL CONSIDERATIONS FOR CHILDREN WITH HYPERHIDROSIS

Bohaty BR, Hebert AA
CURRENT AND EMERGING MEDICAL THERAPIES FOR PRIMARY HYPERHIDROSIS

GRABELL, DA, HEBERT AA
DERMATOL THER 2017 MAR;7(1):25-36
HYPERHIDROPSIS

- Disorder that often begins in childhood
- Embarrassing
- Uncomfortable
- Anxiety inducing
- At times:
  - Disabling
  - Isolating
MEAN AGE OF ONSET

Axillary HH only
Axillary plus other
Palmar HH only
Palmar plus other
## Focal Hyperhidrosis: Age at Onset—Data From 3 Studies

<table>
<thead>
<tr>
<th>Age</th>
<th>Herbst(^1) (N=323)</th>
<th>Drott(^2) (N=850)</th>
<th>Amir(^3) (N=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early childhood</td>
<td>61.1%</td>
<td>62%</td>
<td>60.4%</td>
</tr>
<tr>
<td>Puberty</td>
<td>30%</td>
<td>33%</td>
<td>39.6%</td>
</tr>
<tr>
<td>&gt;18 years</td>
<td>8.9%</td>
<td>5%</td>
<td>0</td>
</tr>
</tbody>
</table>

RECENT SURVEY

USA DATA:

• AVERAGE AGE OF ONSET OF HYPERHIDROSIS WAS 11.3 YEARS OF AGE
• ONE OUT OF SIX US TEENAGERS REPORT HAVING HYPERHIDROSIS
Focal Hyperhidrosis: Age at Onset—US National Survey

- Average age of onset: 25 years
  - 13 years for only palmar HH
  - 19 years for only axillary HH
  - 22 years for palmar or axillary HH alone or in combination with at least 1 other location

MOST (92%) TEENS WITH HYPERHIDROSIS

- SWEAT FROM 2 + FOCAL AREAS
- AVERAGE NUMBER OF RECORDED AREAS OF FOCAL SWEATING = 5
TREATMENT OF HYPERHIDROSIS

- GROWING UP WITHIN THE CONFINEMENT OF THIS SOCALLY OSTRASIZING DISEASE:
- CAN BE EXTREMELY DETRIMENTAL TO CHILD’S DEVELOPMENT OF CONFIDENCE AND SENSE OF SELF
LIMITED THERAPEUTIC OPTIONS FOR CHILDREN WITH HYPERHIDROSIS

• CLINICAL STRENGTH ANTI PERSPIRANTS

OFF LABEL PRESCRIPTIONS:
• GLYCOPYRRHOLATE
• OXYBUTININ
• IONTOPHORESIS
Long-Term Efficacy of Oxybutynin for Palmar and Plantar Hyperhidrosis in Children Younger than 14 Years

Long-Term Efficacy of Oxybutynin for Palmar and Plantar Hyperhidrosis in Children Younger than 14 Years

- 97 PTS
- PALMAR AND PLANTAR HYPERHIDROSIS
- 59 PT (AGES 4 TO 14 YEARS) WITH THERAPY FOR MORE THAN 6 MONTHS
ASSESSMENTS AT 6 WEEKS AND END OF TREATMENT:

QUALITY OF LIFE:
- 94.4% IMPROVED QOL

IMPROVEMENT IN LEVEL OF SWEATING:
- > 91% - MODERATE OR GREAT
GLYCOPYRRROLOATE

MUSCARINIC ANTICHOLINERGIC
DOES NOT CROSS THE BLOOD BRAIN BARRIER
ZERO TO FEW CENTRAL EFFECTS
GLYCOPHYRROLATE

- PEDIATRIC PATIENTS:
  - 90% EXPERIENCED IMPROVEMENT AT 2MG PER DAY

SIDE EFFECTS NOTED IN 30%:
- DRY MOUTH
- DRY EYES

PALLER AS, SHAH PR, SILVERIO AM, WAGNER A, CHAMBLIN SL, MANCINI AJ
J AM ACAD DERMATOL 2012: 67(5): 918 - 923
ORAL GLYCOPRROLATE FOR REFRACTORY PEDIATRIC AND ADOLESCENT HYPERHIDROSIS

- REVIEW OF 12 CHILDREN PRESCRIBED MEDICATION
- 92% NOTED IMPROVEMENT
- 75% WOULD RECOMMEND MEDICATION TO THEIR FRIENDS

KUMAR MG, FOREMAN RS, BERK DR, BAYLISS SJ
PEDIATR DERMATOL VOL 31 (1), 2014: e28-30
OXYBUTYNIN

- MORE COMMONLY USED ANTICHLINERGIC AGNET FOR CHILDREN FOR ALL INDICATIONS
- < 5 YEARS 0.1 MG / KG / DOSE UP TO TID – COMES AS 5 MG / 5 ML
- > 5 YEARS : 5 MG UP TO TID
- EXTENDED RELEASE FORMS :
- NOT RECOMMENDED
HYPERHIDROSIS

CHILDREN / TEENS

- CAN USE IONTOPHORESIS
KNOW SWEAT IN SCHOOL PROGRAM

- SEND KITS TO SCHOOL (3,729 distributed in 2013)
- DEODERANT SAMPLES
- RN SIGHTS NEWSLETTER
SURGERY

- ENDOSCOPIC THORACIC SYMPATHECTOMY
- $20,000 OPERATION IN 20 MINUTES
- MAY DO LASTING HARM
- “IRREVERSIBLE”
SURGERY

- ENDOSCOPIC THORACIC SYMPATHECTOMY
- OFTEN WIDELY ADVERTISED BY SURGEONS
- UP TO 70% OF CHILDREN SUFFER WITH COMPENSATORY HYPERHIDROSIS

PEDIATR SURG INT 2008:24(3):343-347
DIAGNOSIS AND TREATMENT OF PRIMARY FOCAL HYPERHIDROSIS IN CHILDREN AND ADOLESCENTS

BELLET, JS

SEMINARS IN CUTANEOUS MEDICINE AND SURGERY 29:121-6, 2010
UPDATE ON PEDIATRIC HYPERHIDROSIS

GORDON J, HILL SE
DERMATOLOGIC THERAPY VOL 26, 2013; 452-61
WHY LOOK AT PREVALENCE DATA FOR FOCAL PRIMARY HYPERHIDROSIS?

- NOT ENOUGH DATA PREVIOUSLY
- DATA NOT SPECIFIC TO AGES 12 TO 17
- HYPERHIDROSIS OFTEN REPORTED TO BEGIN IN THIS AGE GROUP
More than three-quarters of teens experiencing excessive, uncontrollable sweating says it impairs their day-to-day living a moderate or major amount.

### Impairment

<table>
<thead>
<tr>
<th>Impairment</th>
<th>Count</th>
<th>Weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major or moderate</td>
<td>116</td>
<td>109.54</td>
</tr>
<tr>
<td>Minor</td>
<td>36</td>
<td>34.18</td>
</tr>
<tr>
<td>Does not impair</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Teens 12-17 who experience excessive, uncontrollable sweating at least 1x/week: n=168

Q2: To what extent does excessive, uncontrollable sweating impair your day-to-day life, if at all?
TO WHAT EXTENT DOES EXCESSIVE, UNCONTROLLABLE SWEATING IMPAIR YOUR DAY-TO-DAY LIFE, IF AT ALL?

- 75% OF TEENS REPORTS MAJOR IMPACT ON DAILY LIFE
17% of teens experience excessive, uncontrollable sweating regularly (once or twice a week or most of the time); half never experience it.

Frequency of Symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Count</th>
<th>Weighted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most of the time</td>
<td>64.58</td>
<td>63</td>
</tr>
<tr>
<td>Once or twice a week</td>
<td>102.74</td>
<td>105</td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>99.83</td>
<td>96</td>
</tr>
<tr>
<td>Rarely</td>
<td>229.05</td>
<td>228</td>
</tr>
<tr>
<td>Never</td>
<td>484.96</td>
<td>491</td>
</tr>
</tbody>
</table>

Teens 12-17: n=981
Q1: Over the past year, how often have you experienced each of the following conditions in a typical week, if at all?
Excessive, uncontrollable sweating that is not directly related to the temperature or weather, exercise or other physical activity, or stress.
MOST (92%) TEENS WITH HYPERHIDROSIS

- SWEAT FROM 2 + FOCAL AREAS
- AVERAGE NUMBER OF RECORDED AREAS OF FOCAL SWEATING = 5
WHAT IS THE IMPACT OF PRIMARY FOCAL HYPERHIDROSIS IN THE 12 TO 17 YEAR OLD AGE GROUP IN THE US?

- 17.1% OF TEENS REPORT HYPERHIDROSIS
- 75% OF THOSE TEENS WITH MAJOR OR MODERATE DAILY IMPAIRMENT FROM SWEATING
Trends in Teens Who Experience Excessive, Uncontrollable Sweating

- Impairment of day-to-day living and the bilateral and symmetrical nature of sweating at focal locations are the diagnosing criteria most common among teens.
- Duration of 1 year or longer is least common.

% of teens 12-17, 17.1%

- Excessive, uncontrollable sweating for ≥ 1 year: 80.7%
- Number of focal locations with bilateral sweating (1+): 97.3%
- Impairment (major or moderate): 75.0%
- Experience this sweating at least once a week*: 100.0%
- Onset before age 25: 100.0%
- Family history (positive or unknown): Not asked
- Experienced while awake: 82.4%

* This question served as gating question.

Question text [here](#)

Teens 12–17: n=168
### Comparison of Alternate Criteria Among Teens w Excessive Sweating

<table>
<thead>
<tr>
<th>Diagnosis Criteria</th>
<th>Stringent</th>
<th>Lenient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiencing for 1 year or more</td>
<td>13.8% (no difference)</td>
<td>13.8% (no difference)</td>
</tr>
<tr>
<td>Bilateral, relatively symmetric sweating</td>
<td>16.9% no difference</td>
<td>16.9% no difference</td>
</tr>
<tr>
<td></td>
<td>(different criteria)</td>
<td>(different criteria)</td>
</tr>
<tr>
<td></td>
<td>(1+ bilateral location out of 4)</td>
<td>(1+ bilateral location out of 7)</td>
</tr>
<tr>
<td>Impairs daily activity</td>
<td><strong>12.8%</strong> (major &amp; moderate)</td>
<td>17.1% (major, moderate &amp; minor)</td>
</tr>
<tr>
<td>≥ 1 episode per week</td>
<td>17.1% (no difference)</td>
<td>17.1% (no difference)</td>
</tr>
<tr>
<td>Onset before age 25</td>
<td>17.1% (no difference)</td>
<td>17.1% (no difference)</td>
</tr>
<tr>
<td>Positive family history</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Cessation during sleep</td>
<td>7.7% (awake only)</td>
<td>14.0% (awake only or awake &amp; asleep)</td>
</tr>
</tbody>
</table>
HYPERHIDROSIS

• DISORDER OFTEN BEGINS DURING CHILDHOOD
• SMALL CHILDREN – MAY REPRESENT A NUISANCE
• SCHOOL AGED CHILDREN – CHALLENGED BY SWEATY PALMS
• TEENAGERS – CHALLENGED BY PALMAR, PLANTAR OR AXILLARY SITES
SUMMARY

- THIS POPULATION WARRANTS NEW THERAPIES TO RELIEVE THE BURDEN OF DISEASE
- HYPERHIDROSIS BEGINS EARLY IN LIFE AND HAS NOT BEEN RECOGNIZED AS HAVING A MAJOR UNFAVORABLE IMPACT IN THE US TEEN POPULATION