Procedural Pain -
The history and the future

- Past
- Present
- Future

- Partly from a ped/onc perspective

- ISPP June 2013 Stockholm
Pain - adaptive warning system

- Helps prevent further harm; tissue injury
- Not applicable to medical procedures
  - Aim restore good health or treatment of disease
- Obligation to minimize pain
Pain, fear and anxiety

The affective experiences of pain and fear are associated, respectively, with representations of injury and (life) threat.

Pain, fear and anxiety

Although it is not always easy to recognize the difference in clinical practice, the distinction between fear and anxiety is theoretically based on the focus of threat.

The term “fear” connotes an identifiable threat.

Pain is a symptom much feared by children and parents in ped/onc

- The most feared for younger children.

- Enskär K et al. J Pediatr Oncol Nurs 1997;14:18-26
Pain – the history

- Hippocrates 2300 years ago concluded that children tolerate pain less than adults

- Since then several myths about children’s pain and its treatment have obstructed a sound development
Pain history – the myths

- Children tolerate pain and discomfort better than adults.
  - Flechsig in 1872 during experimental embryological research found that myelination in the newborn was not complete, and that associative cortical areas were undeveloped.

Pain history – the myths

- Darwin in his work, The Expression of Emotions in Man and Animals, stated that expressions of pain or other emotions in “animals, children, savages, and the insane” could under no circumstances imply the awareness of pain

- Darwin C. The expression of emotions in man and animals. 1 ed. London; 1872.
Pain history – the myths

These ideas resulted in the practice of performing surgical operations on newborn children and infants without anesthesia, still quite common in the 1950s

Pain history – the myths

- In earlier days management methods for pain and fear scarce; common to restrain or even strap children to perform procedures

- An argument supporting this practice was the incomplete myelination at birth.
  
  
Pain history – the myths

... and it was often stated that children were unable to perceive and experience pain the way adults do, because their nervous system is immature.

Pain – the attitudes

- In addition to myths about pain and opioids
  - Several individual and societal attitudes obstacles to improve pain management.
  - Even more problematic; cannot be proved or disproved.
  - To increase professionals’ knowledge often straightforward; to influence and change attitudes takes considerable time.
Pain – the attitudes

- Pain character building
- Overcoming it hardening effect; improves personality and ability to compete.

Concerning physicians’ attitudes toward pain management in children:

- Tend to attribute pain to medical procedures that were out of their direct control; think procedures performed by physicians in other specialties more painful, less well handled.

Procedures

- Vary widely in:
  - How intensive
  - How much pain and fear they cause

  Experience affected by
  - Cultural factors
  - Anxiety level in child and parent
  - Fears and expectations of child
  - Coping style
  - Vulnerability in child
  - Invasiveness and duration of procedure
  - Previous pain experiences
  - Prognosis, etc.
Procedural pain in pediatric oncology – the Past

- 40-50 years ago almost all children with cancer died; today 75-80% survive
- No central lines/ports (came during eighties) – more pain and fear
- BMA, biopsies and LPs very seldom performed in anesthesia; often only sedation with diazepam
  - “Suffering for the child, parents and personnel”
  - Gradual increase of anesthesia from the beginning of eighties.
- Increased use of NO during the eighties; revival the last ten years.
- Conscious to deep sedation with benzodiazepines, mainly midazolam, or in combination with opioid. Later propofol, but only in hands of anesthesiologists.
- Increased use of clonidine in minor procedures.
The Measurement of Symptoms in Children with Cancer; MSAS 10-18

Collins J

J Pain Symptom Manage 2000;19:363-377

- Pain compared to other symptoms

- Determines symptom prevalence, characteristics, and distress in children with cancer during the previous week

- Most prevalent symptoms (%)
  - lack of energy 49.7
  - pain 49.1 (most common S in inpatients 84.4, outp 35.1)
  - drowsiness 48.4
  - nausea 44.7
  - cough 40.7 etc.

- Of symptoms prevalent in >35%; highest distress (% quite a bit to very much)
  - feeling sad 39.5
  - pain 39.1
  - nausea 36.6
  - lack of appetite 35.8
  - feeling irritable 34.7
Pain in children with cancer - Etiology

Causes of pain

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Nurses and physicians</th>
<th>Children and parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer-related pain</td>
<td>[Bar chart data]</td>
<td>[Bar chart data]</td>
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<tr>
<td>Procedure-related pain</td>
<td>[Bar chart data]</td>
<td>[Bar chart data]</td>
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<tr>
<td>Treatment-related pain</td>
<td>[Bar chart data]</td>
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</tbody>
</table>

Also shown by:
Procedural pain – children with cancer

- Port needle, iv sampling & cannulation, finger pricks
- LP
- bone marrow aspiration/biopsy
- fine needle/true cut biopsy
- pleurocenthesis
- brachytherapy, etc.

Ljungman G et al. Pain 1996;68(2,3):385-394

Pain from pediatric cancer: A survey of an outpatient oncology clinic.

- Cross-sectional, n = 77, age range = 2-19y
- Ped onc outpatient clinic

<table>
<thead>
<tr>
<th>Procedure</th>
<th>% &gt; VAS 30</th>
<th>Mean VAS</th>
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<tbody>
<tr>
<td>BMA</td>
<td>78</td>
<td>24</td>
</tr>
<tr>
<td>LP</td>
<td>61</td>
<td>45</td>
</tr>
<tr>
<td>Venipuncture</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>Finger prick</td>
<td>23</td>
<td>18</td>
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<tr>
<td>Chemotherapy</td>
<td>41</td>
<td>25</td>
</tr>
<tr>
<td>Disease</td>
<td>37</td>
<td>24</td>
</tr>
</tbody>
</table>
Other procedures in children

- Burn dressings
- Laser treatments for port-wine stains
- Suturing of lacerations
- Repositioning of fractures
- Botox injections
- Etc.
Procedural pain in children – the evidence

- Amethocaine superior to EMLA (AstraZeneca Canada Inc) for reducing needle pain
- Distraction and hypnosis nonpharmacological interventions effective for management of acute procedure-related pain in hospitalized children

Procedural pain – the present

Over the past 10 to 15 years, several epidemiological surveys emphasize:

- a significant proportion (49% to 64%) of hospitalized children receive inadequate pain management despite the increase in knowledge and available treatments.

Procedural pain

- Insufficient pain management in procedures at the beginning of a disease trajectory may reduce the effect of treatment in later procedures.

Procedural pain – the Future

The ideal situation

The ideal circumstances
- Assessment of pain and fear to adjust treatment

The ideal method/drug
- Combined analgesia and sedation
- Short time to action
- Short effect duration
- No respiratory or circulatory depression
- No side-effects
- Often a combination of pharmacological and psychological methods
Conclusions procedural pain

- Still a lot of pain, fear and suffering in pediatric procedures due to insufficient management
  - Barriers
    - Ignorance, myths, attitudes, insufficient logistics, etc.

- Obligation to reduce this pain, fear and suffering as much as possible
Thank you for your attention!

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