How to Deliver an Effective Research Presentation

Eugene S. Kim, MD
Associate Professor of Surgery
Children’s Hospital Los Angeles
USC Keck School of Medicine

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@dreskim  #AASFC17
No disclosures
Outline

- Important factors for giving an effective presentation
- Examples of what is good and what is not so good
- Helpful tips and advice
Critical aspects of a presentation

- The content of what you say
- How you show it
- How you say it
Structure of presentation

• Background – what’s the problem
• Hypothesis – how can we fix the problem
• Methods – what techniques did you use
• Results
• Conclusions
Background

- What’s the problem?
- How is the current question related to the problem?
- Assume your audience knows nothing about your topic
- Distill and be brief
Hypothesis

• Flows from the background
  – How will you address your problem?
  – What do you think will happen?
Methods

- Say what is needed
- Excessive detail will be distracting
- Numbers
- Statistical analyses
- Figures - pictures
Results

- Clear figures with clear legends
- Clear stats
- Clear tables in large font
- Highlight interesting data
- Keep it simple
Conclusions

• Circle back to hypothesis
• Clear and simple points
• Future direction
• Font – size, color
• Amount of content
• Animation – augment, not distract
• Level of detail
Presentation style

- Posture
- Eye contact
- Speaking vs reading
- Avoid the uuummmm
- Microphone etiquette
Posture

- Stand up tall
- Hands on the podium
- Don’t move about
Eye contact

• Get your head up and out of the notes
• Look at your audience members
• Look back and forth at your data to keep them focused

• Engage!
Speak to your audience

• Do not read slides
• Deliver bullet points while you augment with your words
• Do not follow words with laser pointer
• When using a pointer, use two hands
  – Move slowly and purposefully to show points of interest
Constraints

- Time
- Amount of information
- Complexity of information
- Attention span of audience
- Knowledge base of your audience
• Be respectful of the time limit!
• Practice, practice, practice
Amount of information

• If short on time, cut the data
• Better to present less data clearly, than a lot of data poorly
• Distill, be concise, focus on the important points
Complexity of information

- Your job is to make it digestible
- Make every talk a lay talk
- Use figures and pictures
Attention span

- Keep an eye on your audience
- Make clear critical points – take home messages
- Re-focus attention
Engaging audience

- Make them listen to you
  - Tell a story
- Inflection, timing
- Keep your audience happy
Practical exam

YES

NO
**Unmatched cohort analysis**

<table>
<thead>
<tr>
<th>Demographics, Outcomes, and Adverse Events</th>
<th>Preimplementation (n = 93)</th>
<th>Postimplementation (n = 70)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baseline demographics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male, No. (%)</td>
<td>51 (55)</td>
<td>33 (47)</td>
<td>.35</td>
</tr>
<tr>
<td>Diagnosis, No. (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEC</td>
<td>49</td>
<td>36 (51)</td>
<td>.88</td>
</tr>
<tr>
<td>Gastrochisis</td>
<td></td>
<td>21 (30)</td>
<td>.74</td>
</tr>
<tr>
<td>Atresia</td>
<td></td>
<td>13 (19)</td>
<td>.38</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0)</td>
<td>1 (0)</td>
<td>1.00</td>
</tr>
<tr>
<td>Gestational age, wk^a</td>
<td></td>
<td>33.5 (26, 36)</td>
<td>.66</td>
</tr>
<tr>
<td>Birth weight, g^a</td>
<td></td>
<td>1786.5 (840, 2602)</td>
<td>.59</td>
</tr>
<tr>
<td>RSB percent estimated, No. (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;40%</td>
<td>55 (79)</td>
<td></td>
<td>.58</td>
</tr>
<tr>
<td>20%–40%</td>
<td>9 (13)</td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>&lt;20%</td>
<td>5 (7)</td>
<td></td>
<td>.78</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to full feeds^a</td>
<td>18 (19)</td>
<td>15 (10, 38)</td>
<td>.70</td>
</tr>
<tr>
<td>Time to start PO after reanastomis^a,b</td>
<td>10 (8)</td>
<td>9.5 (6, 13)</td>
<td>.04</td>
</tr>
<tr>
<td>Days of PN^a</td>
<td>64 (34, 10)</td>
<td>52 (29, 94)</td>
<td>.27</td>
</tr>
<tr>
<td>LOS after definitive surgery^a</td>
<td>40 (22, 99)</td>
<td>38 (21, 63)</td>
<td>.52</td>
</tr>
<tr>
<td>Highest total bilirubin^a,b</td>
<td>6.7 (2.6, 10)</td>
<td>3.9 (1.0, 6.1)</td>
<td>.0005</td>
</tr>
<tr>
<td>Total bilirubin at discharge^a,b</td>
<td>2.1 (0.5, 4.1)</td>
<td>0.7 (0.4, 3.0)</td>
<td>.02</td>
</tr>
<tr>
<td>Percent time of hospital stay with elevated total bilirubin^a,b</td>
<td>50 (0, 91)</td>
<td>24 (0, 70)</td>
<td>.03</td>
</tr>
<tr>
<td>Use of fish oil, No. (%)^b</td>
<td>22 (24)</td>
<td>1 (1)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Use of phenobarbital, n (%)^b</td>
<td>19 (20)</td>
<td>6 (9)</td>
<td>.05</td>
</tr>
<tr>
<td>Use of ursodeoxycholine, No. (%)</td>
<td>35 (38)</td>
<td>21 (30)</td>
<td>.32</td>
</tr>
<tr>
<td><strong>In-hospital adverse events and breast milk use, No. (%)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In-hospital mortality</td>
<td>3 (3)</td>
<td>0 (0)</td>
<td>.26</td>
</tr>
<tr>
<td>PNALD</td>
<td>54 (58)</td>
<td>32 (46)</td>
<td>.15</td>
</tr>
<tr>
<td>Postsurgical NEC</td>
<td>4 (4)</td>
<td>4 (6)</td>
<td>.73</td>
</tr>
<tr>
<td>CLABSI</td>
<td>23 (25)</td>
<td>16 (23)</td>
<td>.85</td>
</tr>
<tr>
<td>Predominant use of BM during advancement to 50% of goal^a</td>
<td>37 (40)</td>
<td>48 (69)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>
Standardization of feeding after surgery

Table 1. Infant Enteral Feeding Guidance for Postabdominal Intestinal Surgery.

<table>
<thead>
<tr>
<th>Patient Type and Feeding</th>
<th>1 Day</th>
<th>7 Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residual small bowel&lt;sup&gt;a&lt;/sup&gt;</td>
<td>&gt;40% remaining small bowel in continuity with colon</td>
<td>&lt;20% remaining small bowel in continuity with colon</td>
</tr>
<tr>
<td>Patient weight, g</td>
<td>&lt;1500</td>
<td>≥1500</td>
</tr>
<tr>
<td>Initial enteral feeds&lt;sup&gt;b&lt;/sup&gt;</td>
<td>12 mL/kg/d continuous feeds</td>
<td>1 mL every 3 hours, then 12 mL/kg/d continuous feeds</td>
</tr>
<tr>
<td>Feeding increases</td>
<td>Increase by 12 mL/kg/d every 48 hours</td>
<td>Increase by 12 mL/kg/d every 3 days</td>
</tr>
<tr>
<td>Feeding intolerance&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Evaluate every 3 hours. If intolerance, hold feeds for 12 hours and reassess.</td>
<td>Evaluate every 3 hours. If intolerance, hold feeds for 12 hours and reassess.</td>
</tr>
</tbody>
</table>

<sup>a</sup> Residual small bowel should be <20% of the total length of the small bowel to maintain intestinal continuity with the colon.

<sup>b</sup> Initial enteral feeds should be started at a rate of 12 mL/kg/d and increased as tolerated.

<sup>c</sup> Feeding intolerance should be evaluated every 3 hours and holds should be considered if intolerance is suspected.
Feeding protocols in IF patients

Immediate Post-Op Period
- Begin PN
- Assess daily for return of bowel function

Bowel Function criteria:
- <15 ml/kg/d NG output
- stool/output output
- minimal pressor support

Can EN be started?
- Yes
- No

If yes:
- Continue PN
- Adjust for electrolyte losses
- Adjust for weight gain

If no:
- Continue PN
- Adjust for electrolyte losses
- Adjust for weight gain

Initial volume: 20 ml/kg/day
(may use 15 ml/kg/day if <1500 g)

Tolerating EN?
- Yes
- No

Advance by 10-20 ml every 12-24 hrs
- Wean PN as tolerated based on fluid volume and weight gain
- Monitor tolerance after each advance

If no:
- Continue to advance to full EN

Distention:
- >10% increase from baseline, do not advance or decrease EN
- Ostomy output: doubling of output in 24 h or >50 ml/kg/d, do not advance or decrease EN
- Stool Output: >10 ml 24 h, do not advance or decrease EN
- Blood in stool: hold EN until NEC assessment is complete

Cholestasis?
- Yes
- No

Minimize lipid at 0.4-0.5 g/kg/d
- Tolerate QIR > 1.4 if needed
- Cycle PN to 20-22 h if stable glucose
- Give trace elements 3 times weekly (cu, selenium, & chromium given daily)
## Outcomes in IF patients

Diagnoses Associated with Intestinal Failure and Short Bowel Syndrome in Infants (N=272)

<table>
<thead>
<tr>
<th>DIAGNOSIS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Necrotizing enterocolitis</td>
<td></td>
</tr>
<tr>
<td>Gastrochisis</td>
<td></td>
</tr>
<tr>
<td>Intestinal atresia (large/small)</td>
<td>27 (10)</td>
</tr>
<tr>
<td>Volvulus</td>
<td>34 (9)</td>
</tr>
<tr>
<td>Long segment Hirschsprung disease</td>
<td>11 (4)</td>
</tr>
<tr>
<td>Tufting or Microvillus inclusion</td>
<td>3 (1)</td>
</tr>
<tr>
<td>Other single diagnoses</td>
<td>14 (5)</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
<tr>
<td>Multiple single diagnoses</td>
<td>77 (28)</td>
</tr>
</tbody>
</table>
Pulmonary Barotrauma in Congenital Diaphragmatic Hernia: A Clinicopathological Correlation

By Yoshio Sakurai, Kenneth Azarow, Ernest Cutz, Antonio Massino, Richard Pearl, and Desmond Bohn

Toronto, Ontario

Table 3. Characteristics of Lung Injury in CDH

<table>
<thead>
<tr>
<th>Characteristics of Lung Injury</th>
<th>Total No. of Occurrences (%)</th>
<th>Contralateral (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyaline membrane formation</td>
<td>62/68 (91)</td>
<td></td>
</tr>
<tr>
<td>Pneumothorax</td>
<td>44/68 (65)</td>
<td></td>
</tr>
<tr>
<td>Intertstitial fibrosis</td>
<td>4/6 (6)</td>
<td></td>
</tr>
<tr>
<td>Parenchymal hemorrhage</td>
<td>35/68 (50)</td>
<td></td>
</tr>
<tr>
<td>Bronchopneumonia</td>
<td>23/68</td>
<td></td>
</tr>
</tbody>
</table>
CDH patients  
Nov 2008- Dec 2013  
n=619

Reason no inclusion (n=448):  
- Parents not approached for consent  
  n=237  
- Not inborn  
  n=61  
- Antenatally unknown  
  n=41  
- No consent  
  n=41  
- Gestational age <34 weeks  
  n=37  
- Other medical problem  
  n=7  
- Major congenital anomalies  
  n=5  
- Congenital problems diagnose before consent 
  n=4  
- Other  
  n=3  
- Ventilation started before ECMO instituted  
  n=1  
- ECMO not available  
  n=1

YES

HFO  
n=80 (46.8%)  
- Survived  
  n=55 (68.8%)  
  BPD  
  n=18 (32.7%)  
  No BPD  
  n=37 (67.3%)  
- Died  
  n=25 (31.3%)  

CMV  
n=91 (53.2%)  
- Survived  
  n=70 (76.9%)  
  BPD  
  n=21 (30.0%)  
  No BPD  
  n=49 (70.0%)  
- Died  
  n=21 (23.1%)
BASClks present in TELu

Native Lung

TELu

NO
CC-10, SPC, and T1α positive cells

Native Lung

TELu

Native Lung

TELu

T1-α

NO
Co-implantation of HIO and OU maintains differentiated epithelial cell development
Expanded periportal cells:

- Pan-Cytokeratin+
- Albumin+
- Fgf10 induced cells: ALBUMIN+, PCK
- Pre-hepatocyte phenotype YES
Expanded cells are proliferating but HNF4α-.

HNF4α: marker of hepatocyte differentiation
- Negative expression suggests a HPC phenotype
PROM1 cells express epithelial and mesenchymal markers

Mavila et al, *Hepatology* 2014
Background

- Neuroblastoma represents ~15% of all pediatric cancer related deaths
- High-risk neuroblastoma 5-year survival rate: 40-50%
- ~80% of high-risk patients will initially achieve remission
- Most common cause of death from relapse and metastatic disease
Background

• Neuroblastoma represents 15% of all pediatric cancer related deaths

• High-risk neuroblastoma 5-year survival rate: 40-50%

• 80% of high-risk patient will initially achieve remission

• Most common cause of death from relapse and metastatic disease
Implanted Prior to ARG1 Knockout

- **Female ARG1 flox/flox UBC-cre/ERT2 Hosts**
- **6 subcutaneous implants/host**
- **polyglycolic acid + poly-L lactic acid**
- **Multicellular clusters**
- **3-8 weeks Pre-Tamoxifen**
- **>5 weeks Post Tamoxifen**
- **Tamoxifen Induction**
  - Histologic analysis
  - Serum Amino Acids
  - Serum Ammonia
- **Harvest**

Methods

Treatment Groups
1. Control (n=5)
2. ch14.18 (n=5)
3. NK cell (n=6)
4. NK cell + ch14.18 (n=6)
• Study design: Prospective, multicenter study including Children's Oncology Group institutions.

• Patient population < 6 months with small adrenal masses and no evidence of spreading beyond the primary tumor.

• Methods: Parents chose observation or immediate surgical resection. Serial abdominal sonograms and urinary vanillylmandelic acid and homovanillic acid measurements were performed during a 90-week interval. Infants experiencing a 50% increase in the volume of the mass, urine catecholamine values, or an increase in the homovanillic acid to vanillylmandelic acid ratio greater than 2, were referred for surgical resection.

Necrotizing Enterocolitis

EARLY FEEDING FOR NECROTIZING ENTEROCOLITIS

Bettina Bohnhorst, PhD
Claudia Bohnhorst, MD
Corinna S. Peter, MD

• J Pediatrics, 2003
• Single-center, retrospective cohort
• Advanced at 20cc/kg/day after 3 days of no portal venous gas on ultrasound
Necrotizing Enterocolitis - early refeeding

- 28 infants with NEC of 523 during 4 year observation
- 19 infants with NEC in control group
- 2 recurrences in group 1, 1 recurrence in historical control
- Conclusions: Not significant difference but underpowered
Cronobacter sakazakii using V6-V8 primer
FGF10 signals from mesenchymal cells to hepatic progenitor cells

- Mesenchymal cells express \textit{Fgf10}
- Embryonic HPCs potentially express FGFR2b

Early ABx Protect Against Opportunistic Pathogens

Incidence of NEC

No bacteria No antibiotic 29%
C. muytjensii 69%
C. muytjensii + Amp DOL 1 25%
C. muytjensii + Amp DOL 3 71%
Goals of Today’s Session

In Pediatric Trauma Patients:

• Identification of patients at risk for different injury types
• Imaging and management of head injuries
• Indications for cervical collar and radiographic imaging
• Screening for intra-abdominal injury, indications for imaging
• Identification of patients at risk for NAT
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The End

• Questions?

@dreskim

Email: eugeneskim@chla.usc.edu