WCHRI Lunch & Learn

Creating and Delivering Powerful Scientific Presentations

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October 8th, 2019
Welcome to this WCHRI Lunch and Learn!

Remember to present your research at WCHRI Research Day if you received WCHRI support.

Remember to acknowledge the Foundations that supported you and/or your work.
Objectives

At the completion of this session, you will learn how to:

• Identify the appropriate sections of oral or poster presentations
• Understand and specifically target your presentation to your specific audience
• Identify tips for creating effective presentations
• Identify strategies to improve your presentation skills
Outline

• How to communicate with your audience
• How to prepare a poster or oral presentation
  Design, content, and delivery
Why Present Your Research?

✓ To share your research question, process, and outcomes
✓ To highlight the importance and value of your work
✓ To engage with your academic peers
✓ To fulfill your commitment to knowledge translation (your own, your supervisor, your funder)
POSTERS
Preparing a Poster

• Content
• Design
• Delivery
Preparing a Poster

- **Content**
- **Design**
- **Delivery**
Content: Standard Components

1. Title
2. Introduction/rationale/purpose
3. Methods
4. Results
5. Conclusions/future directions
6. Acknowledgements/references (??)
Content: Standard Components

1. Title
2. Introduction/rationale/purpose
3. Methods
4. Results
5. Conclusions/future directions
6. Acknowledgements/references (?)
Options → Convey results in title

Ask a question
Preparing a Poster

- Content
- Design
- Delivery
Planning

• Set up the correct dimensions **before** you start

• Layout: Institution template vs original

• Resolution: Printer vs screen

• Print: Send in advance
  
  *SUBPrint, VIVID Print*
Distribution

• 600 words (300 better)

Proportions:
• 20% text
• 40% figures
• 40% space
Graphics

- Flow diagrams
- Charts/Graphs
- Images
- Tables & Figures
- Infographics
  - Piktochart
  - Canva
Font Style

- Use sans serif fonts instead of serif
  **Sans serif** fonts: Arial, Helvetica, Calibri

- Avoid too much underlining

- **Bold** or *italicize* key words

- Left-align (vs fully justify) text
Font Size

- Title: 85pt
- Authors: 48-52pt
- Sub-headings: 30-32pt
- Body: 24-28pt
- Captions: 18pt
Colours

Layout:
• No – dark background and light text
• Yes – light background and dark text
• Avoid too many colours (2-3 max)
• Use colour wheels
  http://kuler.adobe.com
Preparing a Poster

- Content
- Design
- Delivery
Plan ahead

• Set-up early, take down on time (for WCHRI, this will happen at lunch)
• Protect poster in canister
• Print 8x11 copies of your poster (for back-up and hand-outs)
• Bring business cards
Communicate

Engage, educate, entertain

• Know your stuff
• Know your audience
• Be clear and concise
• Do your best to answer questions; no one expects you to be perfect
Communicate some more

• Avoid reading your poster
  Explain context, problem, and the solution/your research

• Summaries – varying lengths

• Body language
  Face audience
  Make eye contact
  Be mindful of gestures
Critiquing Posters
Can you stand out?
Can you stand out?

Main finding goes here, translated into plain english. Emphasize the important words.
Can you stand out?

Cecile Janssens @ceceljanssens · 3j

I am old-school. I don't appreciate this. When reading posters, I don't want to consume a conclusion, but be given enough relevant details about methods, statistics, and results to invite a conversation.

Science is all about methods & statistics.

To Save The Science Poster, Researchers Want To Kill It And Star… npr.org
Cortical Neurons over-expressing X-linked inhibitor of Apoptosis (XIAP) via Adeno-associated virus (AAV)

Maryam Kebbe1, Sarah Wassmer, and Catherine Tsilifidis
University of Ottawa, Department of Ophthalmology and Cellular and Molecular Medicine, Ottawa, Canada
Ottawa Hospital Research Institute, Vision Program, Ottawa, Canada

Abstract

The X-linked inhibitor of apoptosis (XIAP) inhibits programmed cell death or apoptosis by preventing caspase 3, 7, and 9 activity. Caspases are enzymes responsible for cell death. In addition, XIAP prevents cell death by targeting NF-kB, JNK, TAK-1, MAPK, and MAPK cascade pathways. XIAP overexpression also decreases apoptosis. Over-expressed XIAP has been shown to impair neurite length. As a result, the purpose of this research is to determine if the over-expression of XIAP has an impact on cortical neuron outgrowth.

In this research, AAV will be over-expressed via adeno-associated virus (AAV) in primary cortical neurons to examine its effects on neurite length. The control infection is AAV-GFP (Green Fluorescent Protein). Using these 12-well dishes, neurite tracking will be performed over the course of 5 days. Neurite length will be measured using neuron reconstruction and cell tracking using ImageJ (NIH).

This will determine if neuronal morphology and viability are affected. Finally, over-expression of XIAP and concomitant Bcl-2 down-regulation will be verified by performing IHC and western blot analysis.

This research will thus uncover the relationship between the over-expression of XIAP and cortical neuron outgrowth.

Introduction

Cortical neurons are known to be key in the control system. The frontal region of the brain, including the prefrontal cortex, is involved in the control of cortical neurons and involves visual neuronal activity. The primary neurons, located in the prefrontal cortex, are essential for the control of cortical neurons and involve visual neuronal activity.

Cortical neurons are generated in prenatal life and may be disturbed by molecular and genetic developmental mechanisms such as apoptosis. Apoptosis, known as a programmed programmed cell death, can either have a positive or negative effect on neuronal development. During the development of the CNS, approximately half of all neurons undergo apoptosis, causing a significant decrease in the number of neurons.

Methods

Primary cortical neurons were dissociated from the newborn mice at postnatal stage 7 or 8. Neurons were cultured using standard rat neuron culture media. The following day, the cells were treated for 2 hours with plating agents. The next day, the cells were transfected with the control AAV-GFP or AAV-XIAP using DNA-pack (A max 4000, A max 2800 V or 1800 V) and electroporated for 5 hours. The next day, the cells were harvested for the control AAV-GFP and AAV-XIAP and Western blot analysis.

Results and Discussion

Microscopic images of the three-day period of infections

Figure 1. The change in neurite length (inches) over the course of 8 days as compared between AAV-OP and AAV-GFP to determine the effect of XIAP on neuronal proapoptotic A. minimum of 4 neurons were measured daily for the neurite tracing for AAV-OP and AAV-GFP

Conclusions

XIAP promotes cortical neuron morphology and viability. It increases neurite length in comparison with the GFP control, in which there were few intact cells for the postnatal stage. Neuronal projections are still present, but the multiplicity of infection (MOI) should be increased in order to obtain more transduced cells. Due to the low survival rate of these neuronal projections, the projection's fragrances were visible in days 4 and 10, respectively in the AAV-GFP treated cells.

Neurite density was measured using ImageJ software. The cell density was noted to be significantly less in the AAV-GFP treated cells compared to the AAV-XIAP treated cells. The neurite density was also significantly higher in the AAV-XIAP treated cells compared to the AAV-GFP treated cells.

Acknowledgements

This research is supported by the National Institutes of Health (NIH) grants 1R01EY025978-01 (to C. Tsilifidis) and 3R01EY025978-09 (to C. Tsilifidis) for funding this research. The authors have no conflicts of interest to declare.
Ventilatory response of male Mozambique tilapia to putative pheromones of conspecific males (Oreochromis mossambicus)

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2 University of Evora, Dept. of Biology, Apartado 34, 7000-054 Evora, Portugal

INTRODUCTION

The Mozambique tilapia is a lake-dwelling cichlid in which males establish social hierarchies through aggressive interactions (1).

The dominant males, unlike the subordinates, release a unique pheromone, whose frequency increases during aggressive interactions towards opponent males. The efficiency of pheromone secretion is positively correlated to the social rank of the male donor (2).

We have hypothesized that dominant males' urine is a vehicle of a putative pheromone, reflecting the competitive ability of the sender and affecting aggressive behavior of the receiver.

OBJECTIVES

- Determine if stimulation with water conditioned by dominant or subordinate males affects:
  1. Opercular ventilation frequency of socially isolated males
  2. Aggressive behavior towards water from conspecific males

METHODS

1. Observation of social groups in the treatment (water only controls, water conditioned by dominant or subordinate males) (Fig. 1).
2. Social isolation of the male (7 days).
3. Acclimatization to the experimental tank (48 hours before experiment).
4. Experiment:
   a. Opercular frequency was assayed in three groups, pretreated with the water from the fish.
   b. Opercular ventilation rate increases in response to the fish's aggressive behavior.
5. Video recording was performed at 2 and 4 hours after the experiment began (Fig. 2).

RESULTS

- In contrast to water-only controls, water conditioned by dominant or subordinate males caused a significant and similar increase in opercular rate and swimming time (Fig. 3 and 4). However, these two variables were not correlated within the three treatment groups (Fig. 3 and 5).
- Increase in swimming time and ventilation caused by odors from conspecific males seem to be independent phenomena, but both may result from independent water quality that increase stress.

CONCLUSIONS

- The frequency of males showing aggressive behavior was lower in the group stimulated with water from dominant males than in those stimulated with water from subordinate males or water-only controls, but not statistically significant (Fig. 4).

- It remains to be conclusively demonstrated that a putative urinary pheromone of dominance reduces aggressiveness in opponent males.
Chaotic Psychedelic Poster

Introduction

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Remember to size your font to fit your information into the space. The larger your font, the easier it will be for others to read your poster. Insert your text here.

Methods

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Purpose

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Literature Cited

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Disclosure

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Expected Results

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Tools

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Doctors Technician Training Module

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Expected Results

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Disclosure

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Expected Results

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Disclosure

Remember to size your font to fit your information into the space. The larger your font, the easier it will be for others to read your poster. Insert your text here. You can place your organization logos on either side of the title of the poster.
Ventilatory response of male Mozambique tilapia to putative pheromones of conspecific males
(Oreochromis mossambicus)

Ana Leite*, Rute Mendonça, Adelino V.M. Cunha, Eduardo N. Barata
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**University of Évora, Dept. of Biology, Apartado 04, 7000-056 Évora, Portugal

INTRODUCTION

The Mozambique tilapia is a schooling fish that makes available several interactions through aggressive behaviors (1).

The dominant males, unlike the subordinate ones, release a pheromone that increases during aggressive stimuli towards opponent males. The effect of the pheromone is transmitted to the social structure of the fish, which may be related to the social rank of the male donor (2).

We hypothesized that the dominant males' urine contains a putative pheromone, which affects the aggressive behavior of the receiver males.

OBJECTIVES

1. Determine if stimulation with water conditioned by dominant or subordinate males affects:
   a. Operative ventilation frequency of socially isolated males
   b. Aggressive behavior towards males in a mirror

METHODS

1. Observation of social groups: dominant males and subordinate males, were conditioned by dominant or subordinate males (Fig. 1g).
2. Social isolation of the male (7 days).
3. Acclimation to the experimental tank (48h before experiment).
4. Experiment:
   a. 4 groups (Fig. 2): dominant male urine (2), water (2).
   b. 4 treatments (Fig. 3): urine (2), water (2).

RESULTS

- No significant differences found in operative ventilation frequency between treatment groups (Fig. 4).
- A significant decrease in aggressive behavior was observed in the treatment groups compared to the control groups (Fig. 5).

CONCLUSIONS

- The results suggest that the urine of dominant males contains a pheromone that reduces aggressive behavior in subordinate males.
Assessing feasibility, user experiences, and preliminary impact of Conversation Cards for Adolescents® (CCAs): a pilot randomized controlled trial


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Background & Purpose

- Providers report barriers to communicating effectively with and support adolescents in weight management, most of whom do not meet lifestyle recommendations.
- We developed Conversation Cards for Adolescents (CCAs), a clinical, bilingual (English & French) tool to facilitate conversation between adolescents with obesity and providers regarding lifestyle behavior change (Figure 1).
- The purpose of our ongoing research is to assess the feasibility, user experiences, and preliminary impact of CCAs on collaborative goal-setting.

Methods

- This prospective study is a mixed-methods, pragmatic, theory-driven, pilot randomized controlled trial with 30 adolescents with obesity and 9 providers at the Northeast Community Health Centre (NECHC; Alberta Health Services, Edmonton, AB).
- Experimental group: n=25 adolescents will use CCAs to collaboratively set one S.M.A.R.T. (Specific, Measurable, Attainable, Realistic, Timely) lifestyle-related goal with their provider to work on over a 3-week period.
- Control group: n=25 adolescents will collaboratively set one S.M.A.R.T. lifestyle-related goal with their provider to work on over a 3-week period without using CCAs.

Results

- To date, we completed the following activities:
  - Established collaborations and conceptualized our study with providers at the NECHC.
  - Held two in-person orientation sessions (~4 hours) with providers in relation to the study protocol, including intervention design, process, and logistics.
  - Held one in-person training session (~2 hours) on how to deliver the intervention, including shared decision-making principles and S.M.A.R.T. goal-setting.
  - Received ethics and administrative approvals; began patient recruitment in March 2019.

Conclusions, Practice Implications & Future Directions

- CCAs may help to optimize communication between adolescents and providers, moving beyond simplistic, weight-centred conversations to collaborating on individualized treatment plans related to weight and health.
- In examining the feasibility, user experiences, and preliminary impact of CCAs in a real-world clinical setting, our study will inform necessary elements and modifications for a full-scale effectiveness randomized controlled trial on collaborative goal-setting for healthy behavior change in adolescents with obesity.

Figure 1. Sample cards from Conversation Cards for Adolescents

<table>
<thead>
<tr>
<th>What STOPs you from having a healthy lifestyle?</th>
</tr>
</thead>
<tbody>
<tr>
<td>What HELPS you to have a healthy lifestyle?</td>
</tr>
<tr>
<td>What COULD help you to have a healthy lifestyle?</td>
</tr>
</tbody>
</table>

[Diagram showing different strategies and what helps and stops healthy lifestyle]
ORALS
TED's secret to great public speaking
The call to learn
Design: Planning

• What story will you tell?
• Practice, practice, practice
• Seek feedback
• Confirm logistics

Podium
Presenter View
IT Support

Pointer/Water/Timer
Audience (size, backgrounds)
Introduction
Design: Presentation

• If ~10 minutes:
  Title/Intro/Purpose (2-3min)
  Methods/Results (5-6min)
  Conclusion/Future Directions (1-2min)

• How many slides? Less is more
• Estimate 1 minute/slide
Design: Slides

- PowerPoint, Prezi, etc.
- Min. 20-24pt
- Font Type:
  - Serif, Serif, Serif
  - Sans Serif, Sans Serif, Sans Serif

**YES!**  Headings; smooth transitions; picture = 1,000 words

**NO!**  Sound effects; weird/variable transitions btwn slides
  Full sentences; too much text or information
Pecha Kucha

20 (slides) x 20 (seconds)

pechakucha.org
Delivery: Presentation

- Avoid reading your slides
- Body language
  - Face audience; make eye contact
  - Be mindful of gestures
Considerations

- Arrive early to set-up and plan
- Start and finish on time
  - Shows respect for audience and other speakers
- Facilities and A/V connections
- Dress to impress respect
Content: Standard Elements

1. Title Slide
2. Declaration/Conflict of Interest
3. Background/Rationale
4. Research Question/Purpose/Hypothesis
5. Study Design
6. Results
7. Limitations
8. Conclusion
9. Future Directions
10. Acknowledgements
1. Title Slide

- Title
- Name(s)
  - Affiliations, position, institution
- Event and date
- “Thank-you!”
  - For introduction, invitation, being here
- Make a good first impression
2. Declaration Slide / COI

- Ask if slide required
- State competing interests, if any
- Acknowledgements (?)
3. Background/Rationale

• Introduce topic
• **What** is known/not known?
• **Why** is it important to know?
• Target content to the audience
  - Experts? Generalists? Public?
4. Research Question/Hypothesis

- Identify question/hypothesis you will address
- Use one slide
  - Keep it clear and concise
5. Study Design

• Keep your audience in mind re: details
• Keep it simple
  - Prepare to discuss detailed procedures and limitations of design/methodology in Q & A
• Use figure or flow diagram
Enrolment → Assessed for eligibility (n=76)

Excluded (n=1)
- Not meeting inclusion criteria (n=1)
- Declined to participate (n=0)
- Other reasons (n=0)

Randomized (n=75)

Allocated to intervention (LEAP) (n=50)
- Received allocated intervention (n=50)
- Did not receive allocated intervention (n=0)

Allocated to control (n=25)
- Received allocated intervention (n=25)
- Did not receive allocated intervention (n=0)

Lost to follow-up (n=2)
(Reasons: one participant reported technical problems with LEAP; another reported ill-health)

Follow-Up

Lost to follow-up (n=3)
(Reasons: two participants reported personal or partner’s ill-health, while the second reported not complying with intervention)

Analysis

Analysed (n=48)
- Excluded from analysis (n=0)

Analysed (n=22)
- Excluded from analysis (n=0)
Records identified through database searching  
n = 145

Additional records identified through other sources  
n = 80

Records after duplicates removed  
n = 205

Records screened  
n = 205

Records excluded (no relevant information)  
n = 53

Full-text articles assessed for eligibility  
n = 152

No full text available (9)

Other publication of an already included study (5)

Studies included in database for analysis  
n = 138
6. Results

- What will your audience want to know?
- Ensure your results align with question/purpose/hypothesis
7. Limitations

• Better to address than ignore
• Shows integrity and humility
• There is no perfect study
8. Conclusions

- Based on the results you presented
- Link to your question/hypothesis
- Provide context
  - How do your results fit into the **bigger** picture?
- 1 to 3 points max
9. Future Directions

• What are next steps for you? Your lab?
  - Where, why, and how?
• What are logical/potential next steps beyond your own work?
10. Acknowledgements

• List and thank collaborators
• Insert logos; thank funders
Final Words

• Thank the audience for their attention
  “Thank-you very much.”

• Invite questions (even if you don’t want to)
  “I’m happy to take questions if you have any.”
Acknowledgements

- Drs. Sarah Curtis and Chloe Joynt (Dept of Pediatrics, UAlberta)
- WCHRI team (Dr. Lorin Charlton)
WCHRI Research Day: Judging Posters & Talks

1. Quality of research (originality/methods used and methodological rigor)
2. Significance/relevance to the field/society in general
3. Development of idea and clarity of purpose (stated hypothesis or question)
4. Conclusions and future research directions
5. Clear presentation/communication/responses to questions; enthusiasm for topic

- **Outstanding**: Extremely strong with negligible weaknesses (90+)
- **Excellent**: Very strong with only some minor weaknesses (80-89)
- **Very Good**: Strong but with numerous minor weaknesses (70-79)
- **Good**: Strong but with at least one moderate weakness (60-69)
- **Satisfactory**: Some strengths but also moderate weaknesses (50-59)
- **Poor**: Some strengths but with at least one major weakness (<50)
Thank You!

See you at WCHRI Research Day (November 6th)