How to Design a "*Fabulous*" Scientific Poster

Marlene Berro, MS, RAC
Office of Ethics and Compliance
University of California, San Francisco

What is a Scientific Poster

- A scientific poster is concise overview of your research project- 42 x 42 for DDCF National Meeting
- Title-try and keep it short if possible
- Introduction-invitation to read your poster; can be in bullets or short paragraphs
- Methods-description of methods used; can include graphics, flow charts etc.
- Results-if using tables, please try and keep them short
- Discussion of results-try to use bullets with as little punctuation as possible
- References-can be in a much smaller font and optional
- Acknowledgement of support-grant wording and/or thanking people

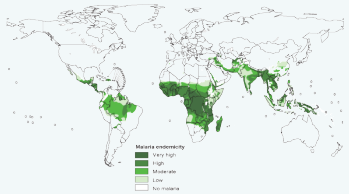
Selection of Malaria Parasites with Decreased Drug Sensitivity in Tororo, Uganda

Jessica Bloome[1], Patrick Tumbaweze[2], Christine Nakazibwe[2], Philip J. Rosenthal[1,2]

[1]Division of Infectious Disease, Department of Medicine, University of California, San Francisco
[2]Infectious Disease Research Collaboration, Makerere University, Kampala, Uganda

Introduction

- Uganda has a high burden of malaria, with over 70,000 deaths per year among children under 5 years and 40% of outpatient admissions attributed to malaria



- The vast majority of infections are caused by the parasite *Plasmodium falciparum*
- Anti-malarial drugs which were once first line treatments, including chloroquine and antifolate medications, now have widespread resistance
- The current first line treatments for malaria are artemesinin combination therapy (ACTs), utilizing a potent, short-acting artemesinin and a long-acting partner drug
- Surveillance on decreased drug sensitivity to ACTs is key in understanding and preventing future development of drug resistance

Specific Aims

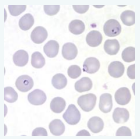
- To compare the drug sensitivity of malaria parasites from infected children who were recently vs. not recently treated with ACTs
- We hypothesize that children recently treated for malaria will have parasites with lower drug sensitivity at their next infection compared to those not recently treated

Methods

- Study participants were a cohort of children ages 6 months to 2 years enrolled in a clinical trial in the highly malaria endemic area of Tororo, Uganda
- All episodes of falciparum malaria in clinical trial patients were treated with the ACT medication artemether-lumefantrine (AL)
- Samples were taken from patients presenting with clinical malaria prior to treatment with AL
- Isolated parasites were tested for drug sensitivity using standardized 72 hour assays with 6 different antimalarial medications
- The measure of drug sensitivity used is the 50% inhibitory concentration (IC50), the level at which parasite growth is reduced by 50%

Methods (continued)

- Drug IC50s for parasites causing malaria within 60 days of a child's prior treatment with AL were compared with IC50s for parasites causing malaria in children with no prior treatment in the previous 60 days



- Recent treatment was defined as treatment within the past 60 days, based on prior research indicating that selection for genetic polymorphisms in parasite drug resistance genes occurs up to 60 days after treatment with AL

Statistical Analysis

- For each episode of malaria in the cohort study, IC50 results were divided into those from patients with recent treatment or no recent treatment with AL
- IC50 data were non-parametric, so we chose to use log IC50 values for analysis
- We utilized a linear regression model with generalized estimating equation (GEE) to account for potential correlation between IC50 values for the same participant at different episodes of malaria
- Two-sided p-values were calculated and $p < 0.05$ was considered statistically significant. Statistical analyses were performed using STATA Version 10 (College Station, TX)

Results

- Over 200 assays of *P. falciparum* drug sensitivity from clinical samples over a 21 month period were analyzed
- Analysis with GEE regression showed a statistically significant relationship between recent treatment with artemether-lumefantrine and lower drug sensitivity for lumefantrine
- There was no association between recent treatment for malaria with AL and drug sensitivity for other antimalarial drugs

Figure 1. Lumefantrine Drug Sensitivity by History of Treatment

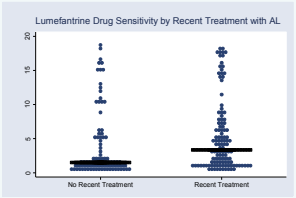


Figure 1:
- Recent treatment was defined as treatment with artemether-lumefantrine (AL) in the previous 60 days
- Median lumefantrine IC50 values are indicated by bars

Results (continued)

Table 1. Drug Sensitivity by History of Recent Treatment

Parasite IC 50 Levels in P1 and P3 Study Children with Recent Episode of Malaria vs. No Recent Episode of Malaria

Data from June 2010 - February 2012

	Mean IC 50 (nM)	Median IC 50 (nM)	Observations	
Piperaquine				
Recent AL	38.0	26.5	124	
No Recent AL	31.4	12.8	186	
	Regression coefficient: 0.324		P= 0.056	
Lumefantrine				
Recent AL	5.2	3.2	118	
No Recent AL	4.4	1.6	84	
	Regression coefficient: 0.340		P= 0.023*	
DHA				
Recent AL	2.5	1.7	137	
No Recent AL	2.2	1.7	107	
	Regression coefficient: 0.074		P= 0.467	
Chloroquine				
Recent AL	404.3	496.0	131	
No Recent AL	534.9	527.0	98	
	Regression coefficient: -0.113		P= 0.395	
Amodiaquine				
Recent AL	108.0	79.0	141	
No Recent AL	122.3	98.1	99	
	Regression coefficient: -0.161		P= 0.128	
Quinine				
Recent AL	185.5	123.8	135	
No Recent AL	145.1	79.0	95	
	Regression coefficient: 0.106		P= 0.265	*P<0.05

Summary and Conclusions

- Analysis of malaria parasites from over 200 clinical samples revealed a statistically significant association between decreased parasite sensitivity to lumefantrine and recent treatment for malaria with the ACT medication artemether-lumefantrine
- This finding may indicate that residual lumefantrine concentration in the blood stream selects for less sensitive parasites
- This would imply that use of the first line malaria treatment, artemether-lumefantrine, selects for resistance in recurrent falciparum infections
- However, the absolute difference in lumefantrine drug sensitivity between groups was not high

Acknowledgments

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Thanks to my mentor, the laboratory staff in both Uganda and San Francisco, and the CTSI faculty and staff at UCSF.

Creating an effective poster requires time and planning

What's my message?

Everything you put on your poster relates to a carefully crafted message.

- You must be able to state your main point(s) and conclusion(s) clearly and succinctly.
- ***All*** visuals and text should relate to those points and conclusions.

Family Communication of Genetic Test Results and Uptake of Genetic Testing in a Diverse Population of *BRCA1* and *BRCA2* (*BRCA1/2*) Carriers

Julia Fehniger BA[1,2], Feng Lin MS[1], Mary S. Beattie MD, MAS[1], Galen Joseph PhD[1], and Celia Kaplan DrPH[1]

[1]University of California, San Francisco Cancer Risk Program, Department of Medicine, and Department of Epidemiology and Biostatistics [2]University of Michigan Medical School

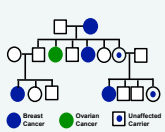
Objectives

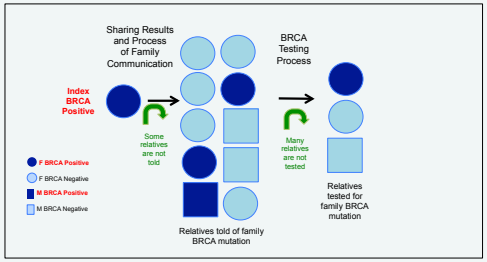
- Determine predictors of sharing *BRCA1/2* results with relatives and *BRCA1/2* testing of at-risk relatives in diverse populations
- Examine the independent predictive value of testing for a known family mutation and a personal history of breast/ovarian cancer on sharing and testing rates among relatives

Introduction

- Individuals testing positive for a *BRCA1/2* mutation may have several relatives at-risk for carrying the family mutation. Index, or first-identified, *BRCA1/2* carriers may differ from family members who subsequently test.
- In order for relatives to undergo genetic testing for a known *BRCA1/2* mutation in their family, they must first be informed about their relative's positive result.
- Communication of *BRCA1/2* results with relatives and uptake of genetic testing may differ among index testers and family testers. No studies of family communication and family testing have sampled from a diverse population of *BRCA1/2* mutation carriers.

The pedigree to the right shows on an individual level how BRCA mutations are transmitted through many generations. On a population level, index carriers represent the "tip of the iceberg."





Methods

- We interviewed 73 individuals identified as *BRCA1/2* mutation carriers between 2003 and 2011 at either San Francisco General Hospital or the University of California San Francisco. Our study population included all *BRCA1/2* carriers identified at SFGH, all non-white carriers identified at UCSF, and a random sample of white carriers identified at UCSF.
- We collected self-reported participant sociodemographics and personal cancer history. Relatives were eligible for sharing if they were at least 16 years old at the time of the survey. Relatives were eligible for testing if they were ≥ age 25 at the time of the survey, and had at least a 25% chance of carrying the family mutation.
- We used Fisher's exact test or the student's t-test to compare baseline participant characteristics. Generalized estimating equations were used to identify univariate and multivariate predictors of sharing and testing. All tests were two-tailed with $\alpha = 0.05$.

Results

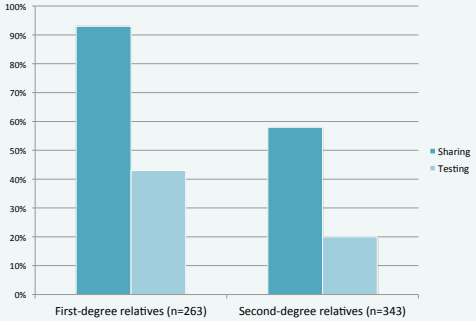
Participant Characteristics

Table 1: Baseline Characteristics	Index tester (n=40)	Family tester (n=33)
Age at testing (years, mean (SD))	47.6 (11.9)	40.1 (10.7)**
Time since testing (years, mean (SD))	3.3 ± 2.6	2.8 ± 2.1*
History of breast/ovarian cancer		
None	2 (5%)	26 (79%)**
Breast Cancer	31 (78%)	5 (15%)
Ovarian Cancer	7 (17%)	1 (3%)
Both	0 (0%)	1 (3%)
Race/Ethnicity		
African American	5 (13%)	2 (6%)*
Asian/Pacific Islander	6 (15%)	7 (21%)
Hispanic	13 (33%)	4 (12%)
Mixed	1 (2%)	3 (10%)
White	15 (38%)	17 (51%)
Ashkenazi Jewish	6 (15%)	10 (30%)**
Born in United States	29 (73%)	27 (82%)*
Education		
Did not complete high school	3 (7%)	3 (10%)**
Completed high school	12 (30%)	4 (12%)
Completed college	15 (38%)	15 (45%)
Completed postgraduate degree	10 (25%)	11 (33%)
Employment status		
Employed	20 (50%)	25 (76%)**
Not employed	20 (50%)	8 (24%)
Testing site		
SFGH	10 (25%)	7 (21%)
UCSF	30 (75%)	26 (79%)
Medical insurance status		
Public insurance	12 (30%)	6 (18%)
Private Insurance	27 (68%)	25 (76%)
Uninsured	1 (2%)	2 (6%)

* p<0.05 **p<0.01

- The study response rate among patients contacted was 66%
- Family testers were more likely to be younger, unaffected by cancer, white, of Ashkenazi Jewish descent, born in the United States, employed and have greater than a high school education compared to index testers (Table 1)
- **73** participants reported **606** relatives eligible for sharing BRCA results and **514** relatives eligible for BRCA testing
- Rates of sharing and testing were higher for first-degree, compared to second-degree relatives (Figure 1)
- Overall, participants shared results with **73%** of eligible relatives. Only **31%** of eligible relatives underwent genetic testing

Figure 1: Rates of Sharing and Testing for First- and Second- Degree Relatives



Results (continued)

Which relatives know about the family mutation?

- Relatives were more likely to know about the participant's mutation if they were first-degree relatives and communicated frequently with the participant (Table 2)
- Relatives of African American and Asian/Pacific Islander participants were significantly less likely to know about the participant's mutation
- Relatives of participants with a personal history of breast/ovarian cancer and relatives of family testers were not more likely to know about the participant's mutation

Table 2: Independent Predictors of Sharing and Testing Based on Relative and Participant Characteristics[a]

	Sharing AOR (95% CI)	Testing AOR (95% CI)
Relative Characteristics		
First-Degree relative	4.1 (1.4 - 11.7)**	0.66 (0.25 – 1.8)
Female	1.6 (0.84 – 3.2)	8.1 (4.8 – 13.8)**
Communicates with participant ≥ once a month	7.3 (3.2 – 17.0)**	5.1 (1.1 – 22.9)*
Lives in United States	1.2 (0.45 – 3.3)	6.3 (1.7 – 23.8)**
Not aware of participant mutation	------	0.16 (0.05 – 0.57)**
Participant Characteristics		
Race/ethnicity		
White	Ref	Ref
African American	0.15 (0.05 – 0.45)**	0.16 (0.06 – 0.40)**
Asian/Pacific Islander	0.18 (0.07 – 0.49)**	0.53 (0.24 -1.2)
Hispanic	1.1 (0.23 – 4.8)	1.9 (0.48 – 7.3)
Mixed	0.86 (0.10 – 7.5)	7.8 (1.8 – 34.0)**
History of breast/ovarian cancer	0.66 (0.11 – 4.0)	0.55 (0.19 – 1.5)
Family tester	0.85 (0.14 – 5.4)	1.6 (0.57 – 4.8)
Less than high school graduate	0.87 (0.27 – 2.8)	0.40 (0.15 – 1.1)

a. The multivariate model controlled for relative gender, degree of relationship, if relative lives in the United States, frequency of communication with participant, testing site, participant race/ethnicity, participant breast/ovarian cancer history, and whether or not the participant tested for a known family mutation.
* p<0.05 **p<0.01

Which relatives are most likely to test?

- Relatives were more likely to test if they were female, communicated often with the participant, and lived in the United States
- In adjusted analyses, neither testing for a family mutation or a personal history of cancer was a significant predictor of testing among relatives
- Relatives of African American participants were less likely to BRCA test than relatives of white participants

Conclusions

- Neither a personal history of breast/ovarian cancer or having tested for a known family mutation was significantly associated with sharing or testing among relatives
- Race/ethnicity is a more important predictor of sharing and testing: relatives of African American participants are significantly less likely to know about the family mutation or to pursue testing themselves

Acknowledgments

Many thanks to the patients and genetic counselors at the UCSF Cancer Risk Program for their participation and guidance throughout this project.

This project was supported by the Doris Duke Charitable Foundation to fund UCSF Research Fellow Julia Fehniger. Special thanks to Claudia Guerra and Galen Joseph at UCSF, UCSF CTR/CTSI and Marlene Berro at UCSF.

Writing an effective abstract

An effective abstract is your first opportunity to hone your message. An abstract is a succinct description of your work. It should:

- **Explain why your work is important** - set the context and pre-empt the question "So what?”
- **Describe the objective(s) of your work.** What are *you* adding to current knowledge?
- **Briefly explain the methods.** Unless the research is about methods, this should not be a major focus of your abstract (or your poster).
- **Succinctly state results, conclusions, and recommendations.** This is what most people want to know. Do not say "We present the results of our study and recommendations for action" - tell them what you found and recommend!

It Comes Down to Money: Why Women Decide Not to Undergo Fertility Preservation

Erin Ebbel Niemasik MD[1], Sai-wing Chan[2], Joseph Letourneau MD[3], Chia-ning Kao MS[2], Audra Katz RN[2], Jeff Belkora PhD[4], Mitchell Rosen MD[2]

[1]NYP Weill Cornell Department of Obstetric and Gynecology, [2]University of California San Francisco Department of Obstetrics, Gynecology and Reproductive Sciences, [3]UNC Department of Obstetrics and Gynecology, [4]University of California San Francisco Department of Surgery and Health Policy Studies

Abstract

Introduction
According to 2012 SEER statistics, approximately 120,000 reproductive-aged women develop invasive cancer every year in the United States.[1] With improving survival rates and increasing awareness of patients' reproductive desires after cancer therapy[2-3], more women may consider undergoing fertility preservation (FP) prior to cancer treatment. Despite national recommendations[4-5] there are multiple barriers for women to undergo FP, including being referred and seen by a fertility specialist[4-6]. It is estimated that only 2-5%[3] of women receive reproductive counseling from a fertility specialist before undergoing cancer therapy. Of women who do get counseled, action to undergo FP may still be low[7]. We sought to determine what barriers prevent women from undergoing FP after a consultation with a fertility specialist.

Methods
From January 2011 to present, reproductive aged women with cancer who presented to a reproductive health clinic for FP counseling were consented to participate in a prospective study. Patients complete surveys at 4 time points: before and after a new patient consultation, at the time they make a decision about FP and 6-8 months later. Possible reasons included: risks to fertility from cancer therapy, partner status, cost, lack of insurance coverage, age, delay of cancer treatment, and future pregnancy's effect on long term prognosis.

Results
To date, 132 women have been recruited (89% accrual rate). In our study 53.8% of women did not undergo FP. Of those who completed the survey at time point 3, we found that 93.75% (30/32) of women identified cost (p=0.005) and lack of insurance coverage (p=0.005) as reasons for not undergoing FP. Pregnancy's effect on long term prognosis trended towards significance (p=0.085). Other concerns such as: risks to fertility from cancer therapy (p=0.529), partner status (p=0.315), age (p=0.552), or delaying the start of cancer therapy (p=0.552), were not found to be significant.

Discussion
This study suggests that after a consultation with a fertility specialist, money and lack of insurance coverage are the two most significant barriers to undergoing FP. Increased financial support services and insurance coverage for women with medically induced infertility may significantly improve access to advanced reproductive technologies.

Introduction

Improvements in early screening and therapeutic techniques have led to improved cancer survival. This has encouraged the oncology community to place greater emphasis on reproductive health as an important survivorship issue.

With increasing knowledge of how local and systemic cancer therapies can lead to acute ovarian failure, infertility and premature menopause, more women are consulting reproductive specialists to discuss preserving their fertility prior to treatment.[8]

Previous studies have shown that concerns of infertility and premature menopause are some of the most important survivorship issues for young women[2-4], with up to 29% of women making future life-saving treatment decisions based on fear of infertility or premature menopause[2].

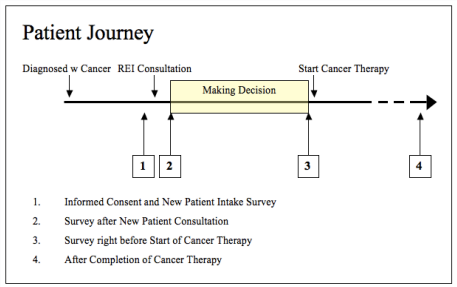
Multiple barriers exist for women to be seen by a fertility specialist[4-7], yet studies have shown that few women may undergo FP even after counseling[7].

Specific Aims

We sought to determine what barriers prevent women from undergoing FP after a consultation with a reproductive specialist.

Methods

- Subjects: Women recently diagnosed with cancer who presented for FP consultation from January 2011 to present, age 18-45 years old
- Patients complete surveys at 4 time points: before and after a new patient consultation, at the time they make a decision about FP and 6-8 months later
- Barriers to undergoing FP: risks to fertility from cancer therapy, partner status, cost, lack of insurance coverage, age, delay of cancer treatment, and future pregnancy's effect on long term prognosis
- Chi-square testing was used in SAS to analyze results
- Continued active enrollment at all 4 time points



Results

To date 132 women have been recruited (89% rate) and 32 women have completed surveys through time point 4.

- Average age 33.4 years old (range 18-45)
- 77.3% desired future fertility
- 84.5% were nulliparous
- 47.7% underwent fertility preservation
- 93.75% (30/32) women identified cost (p=0.005) and lack of insurance coverage (p=0.005) as a reason for not undergoing FP.
- Compared to women who make <$30k, women >$30k are 8.2 times more likely to undergo FP (p=0.033)

Table 1: Patient Population

Demographic	N (%)
Age	
<26	10 (8.4)
26-30	29 (24.6)
31-35	31 (26.3)
36-40	35 (29.7)
41-45	13 (11.0)
Ethnicity	
Caucasian	67 (56.8)
Asian	30 (25.4)
African American	7 (5.9)
Latina	2 (1.7)
Other	12 (10.2)
Relationship Status	
Married	49 (41.9)
Partnered	40 (34.2)
Single	28 (23.9)
Cancer	
Breast	67 (59.3)
Gynecologic	13 (11.5)
Leukemia/Lymphoma	12 (10.6)
Other	21 (18.6)

Table 2: Patient Reported Barriers for Not Undergoing FP

Barrier	N (%)	P-value
Process is too expensive	30 (93.75)	0.005**
Insurance will not cover FP	30 (93.75)	0.005**
Feel that future pregnancy may compromise long-term prognosis	17 (53.13)	0.085*
Not concerned about risks to fertility from cancer therapy	21 (63.64)	0.529
Currently do not have a partner	18 (56.25)	0.315
Not interested based on your age	19 (59.38)	0.552
Concerned that delays in cancer treatment for FP will effect long – term prognosis	21 (65.63)	0.552

Conclusions

- This study suggests that after a consultation with a reproductive health specialist, the most significant barriers for women to undergo FP were cost and lack of insurance coverage.
- Increased financial support services and insurance coverage for women with medically induced infertility may significantly improve access to advanced reproductive technologies.

References

1. NCIFastStats. Statistics stratified by age. Surveillance Epidemiology and End Results (SEER) [online]. 2012; http://seer.cancer.gov/faststats/elections.php
2. Partridge AH, et al. Web-Based Survey of Fertility Issues in Young Women with Breast Cancer. Journal of Clinical Oncology 2004; 22: 4174-4183.
3. Letourneau JM, Ebbel EE, Katz PP, et al. Pre-treatment fertility counseling and fertility preservation improve quality of life in reproductive age women with cancer. Cancer 2011; epub.
4. Lee SJ, et al. American society of clinical oncology recommendations on ferility preservation in cancer patients. J Clin Oncol. 2006; 24: 2917-31.
5. Quinn GP, et al. Patient-physician communication barriers regarding fertility preservation among newly diagnosed cancer patients. Soc Sci Med 2008; 66: 784-9.
6. Forman EJ, et al. Pilot Survey of Oncologists Regarding Treatment-Related Infertility and Fertility Preservation in Female Cancer Patients. J Repro Med 2009; 54: 203-207.
7. Goodman LR, et al. Trends of socioeconomic disparities in referral patterns for fertility preservation consultation. Hum Repro 2012; 27: 2076-81.
8. Letourneau JM, et al. Acute ovarian failure underestimates age-specific reproductive impairment for young women undergoing chemotherapy for cancer. Cancer 2011; epub.

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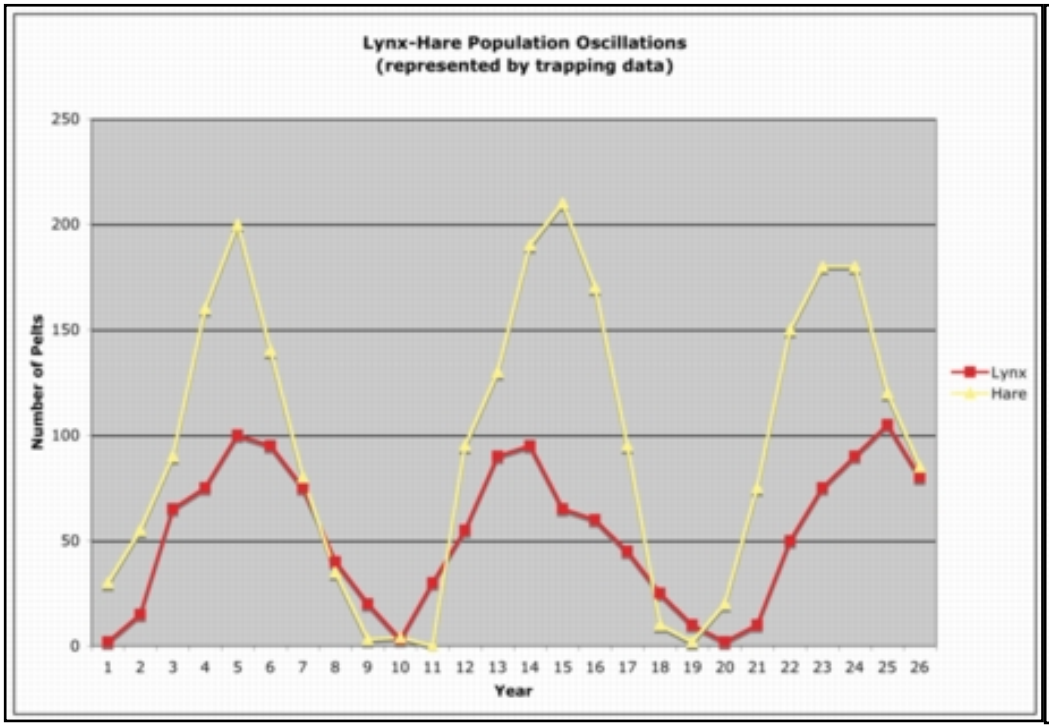
Contact Information: Dr. Erin Niemasik, erin.ebbel@gmail.com

Keep Graphics Clean and Simple

Focus on your data

No



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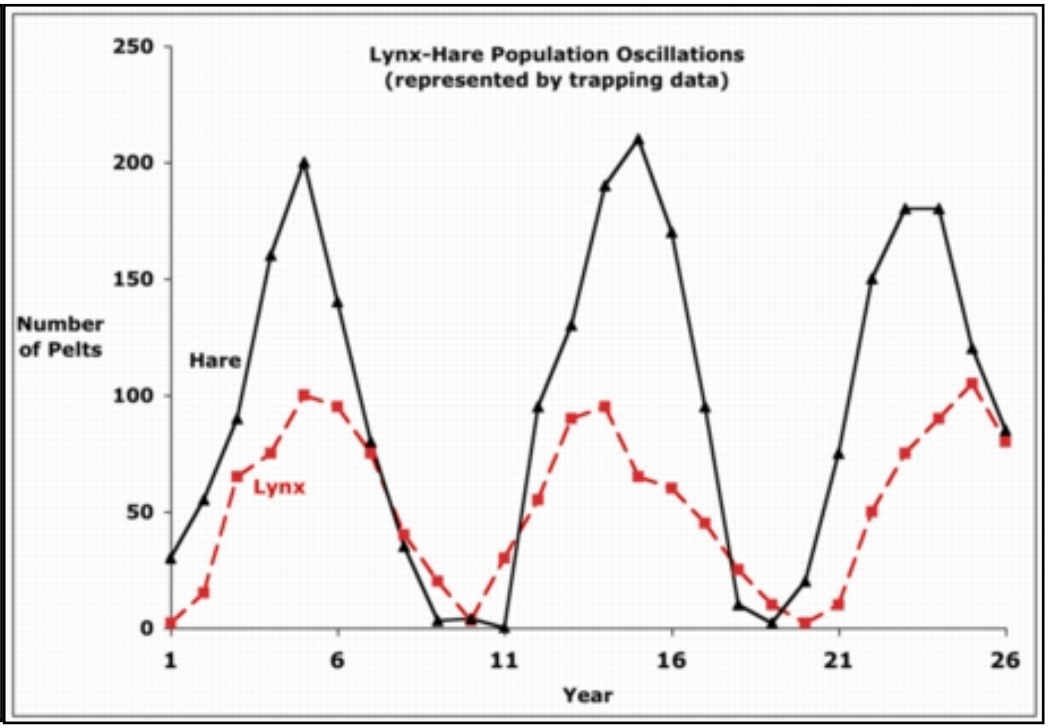


Improving Surgical Risk Prediction in Brain Arteriovenous Malformation

Erick M. Westbroek[1], Ludmila Pawlikowska[1,2], Michael T. Lawton[3], Tony Pourmohamad[1], Charles E. McCulloch[4], William L. Young[1,3,5], Helen Kim[1,2,4]

[1]Center for Cerebrovascular Research, Department of Anesthesia and Perioperative Care, [2]Institute for Human Genetics, Departments of [3]Neurological Surgery, [4]Epidemiology and Biostatistics, and [5]Neurology, University of California, San Francisco

Introduction

- Brain arteriovenous malformations (BAVM) are pathological tangles of cerebral blood vessels that are prone to rupture, imparting a high risk of intracerebral hemorrhage (ICH). Microsurgical resection is considered definitive treatment.
- Several surgical risk grading scales exist, including the gold standard Spetzler-Martin (SM-5) and SM-supplemented (SM-Supp) scales proposed by our group.

	Spetzler-Martin Scale (SM-5)		SM-Supplemental (SM-S)	
Variable	**Definition**	**Points**	**Definition**	**Points**
AVM size	<3 cm	1	<3 cm	1
	3-6 cm	2	3-6 cm	2
	>6 cm	3	>6 cm	3
Deep venous drainage	No	0	No	0
	Yes	1	Yes	1
Eloquence	No	0	No	0
	Yes	1	Yes	1
Age at presentation			<20 years	1
			20-40 years	2
			>40 years	3
Unruptured presentation			No	0
			Yes	1
Diffuse border			No	0
			Yes	1
Total score		**1-5**		**2-10**

- Genetic variants are also likely to influence surgical outcomes and could likely improve current risk prediction models.
- Brain-derived neurotrophic factor (BDNF) is a secreted neurotropin. The Met allele of the *BNDF* Val66Met polymorphism is known to decrease BDNF secretion and has been associated with poor functional outcome after aneurysmal subarachnoid hemorrhage.

Specific Aims

- We sought to validate the SM-Supp model in an independent cohort and show superior predictive accuracy and risk reclassification compared to SM-5.
- We aimed to show that *BDNF* Val66Met genotype is associated with worse functional outcome after BAVM resection and that adding Val66Met genotype to a clinical predictive model could improve accuracy.

Methods

- ***Study Population:*** 483 consecutive patients undergoing microsurgical BAVM resection between 2000-2010 with at least one postoperative visit formed the overall study group. Of these, 300 constituted the *development cohort* for the SM-Supp scale, a *validation cohort* comprised 183 recently added patients. Of these, 341 patients had genotype data and were included in *BDNF* Val66Met analyses.
- ***Genotyping:*** Done by PCR-based assay or microarray (Affymetrix SNP Array 6.0).
- ***Outcome:*** Dichotomous outcome, with poor outcome defined as worsening between preoperative and final postoperative modified Rankin Scale (mRS) score.
- ***Predictors:*** Primary predictors of poor outcome were increased SM-Supp score and Met/Met or Met/Val *BDNF* Val66Met genotype. Other predictors chosen based on clinical/statistical significance include patient age, sex, race/ethnicity, BAVM size, deep venous drainage, eloquence, Spetzler-Martin score, and time between surgery and last follow-up.

Statistical Analysis

- Model comparisons were evaluated by classic Area Under the ROC curve (AUROC) analysis and Net Reclassification Index (NRI). NRI quantifies the correct movement in risk reclassification when comparing two models.
- A significant interaction (p=0.03) of Val66Met polymorphism and hemorrhagic presentation existed; thus, ruptured and unruptured patients were considered separately. Multivariate logistic regression analysis was used to establish associations between genotype and outcome.

Results

Fig. 1: AUROC Comparison of Surgical Risk Prediction Models

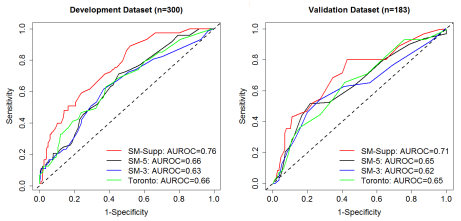


Figure 1. SM-Supp has higher AUROC than SM-5 and other grading scales in both the development and validation cohorts (p<0.01).

Fig. 2: Continuous Net Reclassification Index by Outcome Group

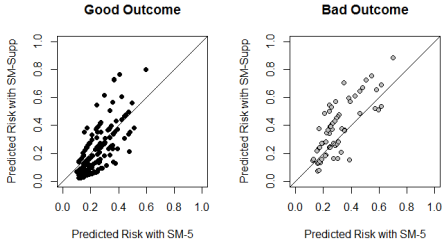


Figure 2. Continuous NRI = 64% (p<0.001). SM-Supp, when reclassifying patient risk compared to SM-5, did so correctly 64% of the time.

The Met Allele of *BDNF* Val66Met is Associated with Poor Surgical Outcome in Unruptured Patients

	Unruptured (n=173)		Ruptured (n=168)	
Met/* vs Val/ Val	**OR (95% CI)**	**p-value**	**OR (95% CI)**	**p-value**
Univariate	2.0 (1.0-4.0)	0.06	0.5 (0.2-1.5)	0.22
Multivariate‡	2.2 (1.0-4.6)	0.05	0.5 (0.2-1.5)	0.25

* Met/Met or Met/Val genotype
‡ Adjusted for patient age, sex, race/ethnicity, SM score, and length of follow-up

Results (continued)

Fig. 3: AUROC Including Val66Met Genotype

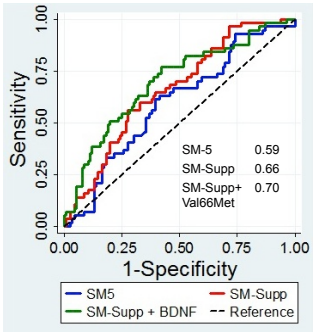


Figure 3. In unruptured patients (n=173), adding Val66Met genotype to the SM-Supp model increased AUROC (p=0.06).

Limitations

- SM-Supp derives from a series of only resected BAVMs, possible referral bias.
- Genetic sample sizes were small due to stratification by index hemorrhage.

Conclusions

- The SM-supplemented scale performed equally well predicting outcomes in an independent dataset, and demonstrated superior discrimination and risk reclassification when compared to Spetzler-Martin scale.
- The Met allele of *BDNF* Val66Met is associated with increased risk of poor functional outcome after BAVM resection in unruptured patients.
- Adding *BDNF* Val66Met genotype to a model with SM-Supp improved predictive ability compared to SM-5 and SM-Supp alone.
- The SM-supplemented scale should be considered for clinical prediction of surgical risk in BAVM patients.

Acknowledgments

This work was supported by a grant from the Doris Duke Charitable Foundation to UCSF to fund Clinical Research Fellow Erick M. Westbroek, NIH K23NS058357 (H.K.), R01NS034949 (W.L.Y.), and P01NS044155 (W.L.Y.).

We thank all of the patients, caregivers and volunteers for their participation in our research.

Increased phosphorylation of the MAPK/ERK pathway is associated with social impairment in BTBR mice

Alireza Faridar, Dorothy M. Jones-Davis, Eric Rider and Elliott H. Sherr

Department of Neurology, University of California, San Francisco, CA

CTSI

BACKGROUND

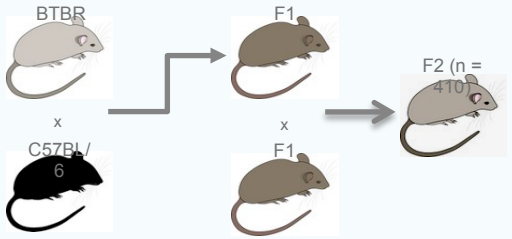
- Advances in autism genetic and in the study of animal models are providing evidences to suggest that MAPK/ERK (extracellular-signal-regulated kinase) pathway is altered in autism.
- Dysregulated MAPK/ERK signaling pathway has been found in the brains of adult BTBR T+tf/J mice[1], a strain exhibiting behaviors with face validity to autism[2].

OBJECTIVE

To evaluate whether dysregulation of the ERK signaling pathway directly correlates with autism-relevant traits in autistic mice model

METHODS

1. We intercrossed BTBR and C57BL/6J mice and assessed social behaviors in 400 F2 offspring.
2. The expression levels and state of phosphorylation of ERK and related kinases were evaluated in the prefrontal cortex of F2 mice that lie on the two extremes of the social behavior spectrum.



Assessing brain anatomy & social behaviors

↓

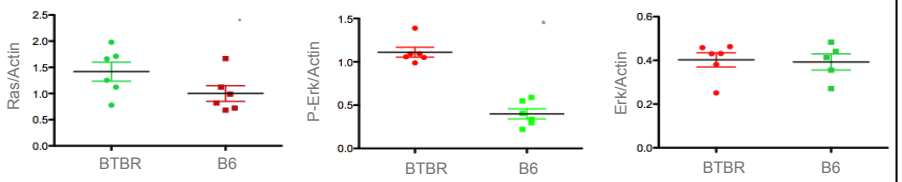
Extracting proteins from prefrontal cortex

↓

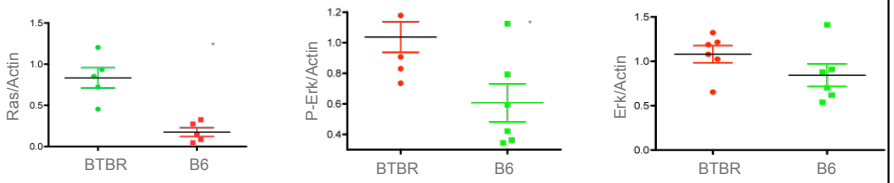
Evaluating ERK pathway by western blot analysis

RESULTS

Fig 1: Increased activity levels of MAPK/ERK in BTBR mice

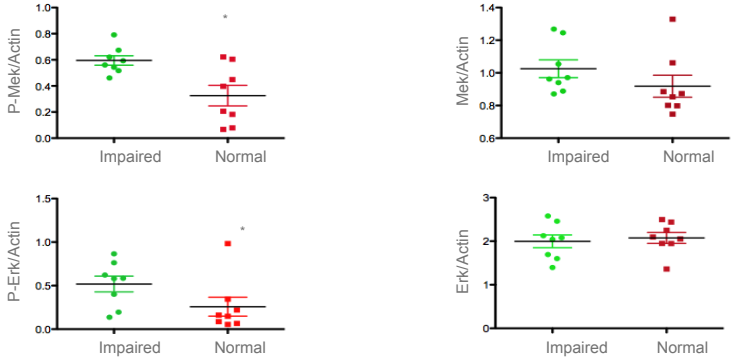


A. Increased RAS & Phospho-ERK levels in the brains of **newborn** BTBR vs. B6 (p= 0.04 , p= 0.001, respectively), using western blot analysis. No significant change in total ERK levels was seen (p=0.8).



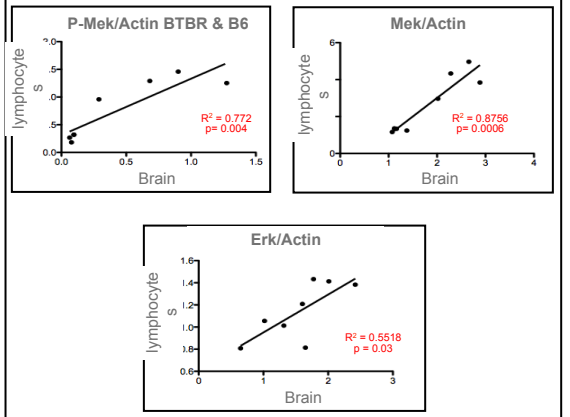
B. Increased RAS & Phospho-ERK levels in the brain of **adult** BTBR vs. B6 (P=0.002 & p=0.02, respectively), using western blot analysis. No significant change in total ERK levels was observed (p=0.16).

Fig 2: Association between activity levels of MAPK/ERK and social behaviors



- Significant correlation between phosphorylation levels of MEK/ERK and juvenile approach front behavior (p=0.008, p=0.03, respectively), when comparing mice that represent the extremes of behavior (normal & impaired). No difference in total RAS, MEK and ERK levels were observed.
- We also tested p-MEK and p-ERK levels in other social measures (Juvenile push crawl, Juvenile nose to nose, Juvenile follow, Self grooming, Novel mouse sniff, Total juvenile interaction), but did not find a statistically significant difference.

Fig 3: Phosphorylated MAPK/ERK levels correlate across brain and spleen



- Significant association of P-MEK, MEK and ERK levels between brain and splenic lymphocytes of BTBR and C57BL/6 (p=0.004, p=0.0006, p=0.04)

CONCLUSIONS

- Levels of phospho-ERK were significantly increased in the brain of newborn and adult BTBR vs. C57BL/6J (B6) mice.
- We observed a significant correlation between juvenile social behavior impairment and activity levels of MAPK/ERK signaling pathway.
- It is possible that phophorylation levels of MAPK/ERK kinases in peripheral blood lymphocytes may serve as a biomarker in clinical studies in autism

References

1.Zou H, Yu Y, Sheikh AM, Malik M, Yang K, Wen G, Chadman KK, Brown WT, Li X. Association of upregulated Ras/Raf/ERK1/2 signaling with autism. Genes BrainBehav. 2011 Jul;10(5):615-24. doi: 10.1111/j.1601-183X.2011.00702.x.

2.McFarlane HG, Kusek GK, Yang M, Phoenix JL, Bolivar VJ, Crawley JN.Autism-like behavioral phenotypes in BTBR T+tf/J mice. Genes Brain Behav. 2008Mar;7(2):152-63. Epub 2007 Jun 7. Erratum in: Genes Brain Behav. 2008Mar;7(2):163.

Acknowledgments

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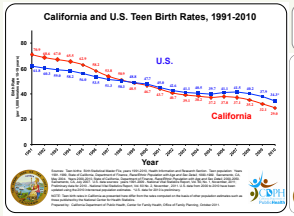
Hot Spot and Cooling Communities: A Study of California Communities with Elevated and Declining Teen Birth Rates

Sarah Isquick[1,2], Mara Decker, DrPH[1], Claire Brindis, DrPH[1]

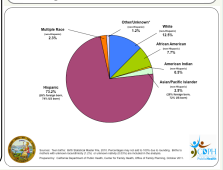
[1]Bixby Center for Global Reproductive Health, University of California, San Francisco
[2]Case Western Reserve University School of Medicine

Introduction

- Teenage childbearing is associated with adverse outcomes for teen mothers and their children. Teenage childbearing also imparts a huge cost to society.
- Since its peak in 1991, the USA teen birth rate and the California teen birth rate have been declining, reaching record lows in 2010 of 34.3 births per 1,000 girls ages 15-19 and 29 births per 1,000 girls ages 15-19, respectively.



Race/Ethnicity (n=43,127) & Nativity of Teen Mothers Ages 15-19, California 2010



- Significant racial, ethnic and geographic disparities exist. In 2010, Latino teens accounted for 47% of the female teenage population in California, but 73.2% of births to teenagers in California.

Specific Aims

- Examine the neighborhood effects contributing to differences in teen birth rates among "hot" and "cooling" communities
- Compare and contrast adult stakeholder interviews, youth focus groups and quantitative data

Methods

- **Design:** Cross-sectional, mixed-methods study
- **Subjects**: From the 541 Medical Service Study Areas (MSSAs) in California, 10 MSSAs were chosen. Within each MSSA, we will conduct 5-10 interviews with adult community stakeholders, and 2 focus groups with 6-8 male and female teenagers, ages 15-18.
- **Study measures:** California teen birth rates were calculated for 2009-2010. Birth data were obtained from the 2009-2010 Birth Statistical Master Files and geocoded. Population-level data were obtained from Claritas.
- MSSAs are sub-county areas comprised of contiguous census tracts that do not cross county boundaries and are state and federally recognized. We used the MSSA as the geographic unit of analysis because they generate more robust teen birth rates than census tract-level data, while identifying differences that may be masked at the county level.
- The 2009-2010 MSSA-level teen birth rates were compared to existing 2004-2005 MSSA-level teen birth rates, and the percent change was calculated.
- MSSAs of interest were purposively selected to ensure a sample that included rural and urban, and northern and southern communities. Racial/ethnic make up, poverty status, education levels, population size, and geographic proximity were all taken into account when selecting communities.
- Key informants were identified in each county, and helped UCSF staff to make contact with community stakeholders for interviews and youth for focus groups.

Analysis

- Qualitative analysis will be conducted using Atlas.ti.
- Qualitative data will be coded into themes, and sub-themes.
- Data analysis will include comparisons of youth and adult perceptions, comparisons based on gender, and inter and intra-county comparisons, among others.

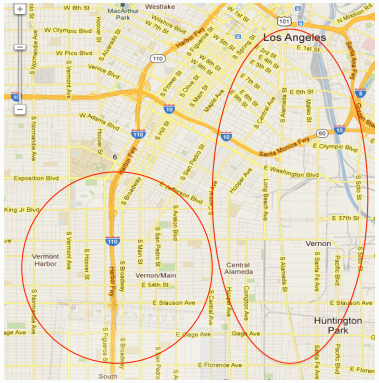
Preliminary Results

Case Studies of Hot Spot and Cooling Communities

Case	TBR 04/05	TBR 09/10	POP 09/10	Comparison	TBR 04/05	TBR 09/10	POP 09/10
Fresno				**Fresno**			
Area 1	83.46	72.97	7907	Area 2	47.07	71.82	1100
				Area 3	34.37	34.07	8307
Kern				**Kern**			
Area 4	82.86	70.92	5485	Area 5	111.93	112.24	10798
				Area 6	75.07	108.66	1178
Los Angeles				**Los Angeles**			
Area 7	92.43	69.80	7908	Area 8	81.19	78.44	8975
Tehama				**Tehama**			
Area 9	68.99	58.87	1274	Area 10	47.99	53.55	2297

TBR = Teen Birth Rate **POP** = Population Size **Area** = Medical Service Study Area

Spotlight on Los Angeles:



Emerging Themes

Safety

"When someone walks into the neighborhood, when someone moves in, ***you gotta introduce them. Sometimes you just gotta tell them truth.*** *There is violence and stuff. There is shootings. It's ghetto. There'll be days where somebody being killed right around the corner…*
…It's not perfect, and it's not how you expect it to be. But you gotta make it as your home.
…When I give my advice, I just tell them not to gangbang. If you gangbang, that's how you get killed." -Male South Central Focus Group (ages 15-18)

*"****The culture that predominates the neighborhood is the gang culture****….You can't just walk somewhere, you can't just go on the bus, you have to plan your route. Even if you cut school, they don't leave the school campus, because they don't want to go home until everyone can go home together."* -Vice President of Youth Programming, Community Based Organization

Preliminary Results (continued)

Inequality

"..The city doesn't pay attention to this part of the city because there's so many low income people…I don't think it's right. ***Everyone deserves to live someplace equal.***
….But we don't do anything about it. ***Hispanics – they feel like their parents are afraid to speak up because they are immigrants – their history is not so clean.***
*…They may be unable to speak English so they might feel they need help…****They think they don't have rights."*** -Female South Central Focus Group (ages 15-18)

Perceptions of Teenage Pregnancy

*"I come here and find well-adjusted young women having kids…****what I'm trying to say is that there's a big element of cultural expectations…When I see Latinas and they see their next step in life is motherhood not college****…if you're surrounded in a community in which parents don't think it's a big deal…most of the teenagers I meet, it's almost like "okay this is the next step." She's supposed to become a mother, and it's a welcome thing. I think it has to do that it's an immigrant community."* -Family Medicine Physician

"There are certain aspects of the community that perpetuates this eternal welfare. ***Your job is to have babies, every baby you have is worth so much money.*** *If you believe in that mindset, then you teach that.* ***All you have to do is have some babies, collect the welfare check.*** *You'll get subsidized housing…all of these things, that's money, that's your job. That's what's perpetuated and taught to a lot of young ladies. I call them formal informal schools. There are people who take you through the entire process…"* -Vice President of Youth Programming, Community Based Organization

"Taboo. No Hispanic parent wants their daughter to be pregnant at such a young age. *Among the older folks, it's like no, we want you to work hard and go to college. Latino community gets slapped with – oh we love our younger children (babies of teens), want them to get pregnant, but no, they want them to go on, get a higher degree."* -Community Member/Activist

Misconceptions About Birth Control

"It has an effect. One girl I know, she was super skinny, she was on birth control for three months and she got big.
…It's like weed, it makes you have munchies.
…I went to the doctor one day, and he said, ***once a female gets on birth control she's going to be addicted.*** *A lot of girls use it a lot, they take too many per day.*
…Some girls they take it too far, they use a lot of things at once. They take birth control, put a condom on, and a patch." -Male South Central Focus Group (ages 15-18)

Preliminary Conclusions

- Safety is a constant concern.
- Youth are impacted and frustrated by the inequality they see in their neighborhoods.
- Perceptions of teenage pregnancy are influenced by cultural and community norms.
- There are multiple reasons why teenagers do or don't use birth control, and why teenagers get pregnant.
- Both LA communities are experiencing a demographic shift, with more African American people moving out, and more Latino people moving in.

Acknowledgments

This work was supported by a grant from the Doris Duke Charitable Foundation to the University of California, San Francisco to fund Clinical Research Fellow Sarah Isquick.
Many thanks to: the Clinical and Translational Research (CTR) Program, Dr. Peter Chin-Hong, Dr. Joel Palefsky, Cecily Hunter, Ruby Singharo, Marlene Berro, and faculty and colleagues in the CTR Program at UCSF.

Reconstitution Inflammatory Syndrome in Sub-Saharan Africa

David P. Janka[1], Miriam Laker[2], Abigail Phillips[1], Jackson Orem[3], Edward Mbidde[4], Jeffrey N. Martin[1]

[1]University of California, San Francisco; [2]Infectious Diseases Institute, Kampala, Uganda;
[3]Uganda Cancer Institute, Kampala, Uganda; [4]Uganda Virology Research Institute, Entebbe, Uganda

Background

- Immune reconstitution inflammatory syndrome (IRIS) can occur in HIV-infected patients upon initiation of antiretroviral therapy (ART).
- IRIS, which is believed to result from a newly reconstituted immune system exuberantly responding to residual opportunistic pathogens, can vary in severity from minor signs and symptoms to death.
- In sub-Saharan Africa, in addition to the AIDS epidemic, there is also a high prevalence of infection with Kaposi's sarcoma-associated herpesvirus, the virus that causes Kaposi's sarcoma (KS).
- KS has subsequently become the most common cancer in the region.
- Now that ART is becoming available in Africa, it is important to investigate the frequency and severity of IRIS in the context of treating patients with AIDS-related KS.

Objectives

To estimate the frequency, spectrum, and severity of IRIS in patients with AIDS-related KS who initiate ART.

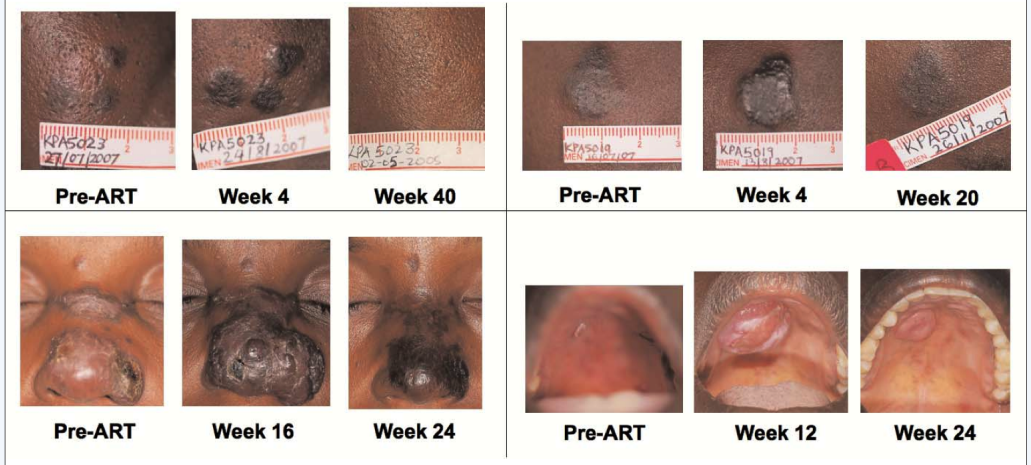
Methods

- In Kampala, Uganda, we investigated the occurrence of KS-IRIS in the context of a randomized clinical trial (the ARKS Study) comparing two ART regimens given to patients with AIDS-related KS.

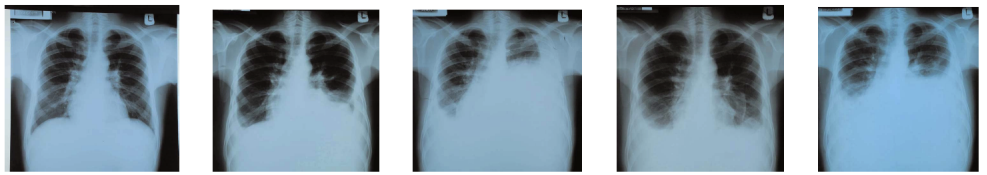
- Participants were examined prior to therapy and then every 4 weeks for 48 weeks.
- Given limited prior information regarding KS-IRIS, we used a pilot phase to develop a protocol to capture events suspected to represent KS-IRIS.
- A questionnaire was designed to record relevant signs and symptoms.
- Visual changes in cutaneous and oral lesions were documented with digital photography.

Results

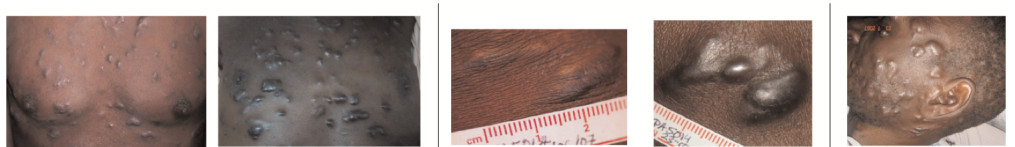
Self-Limiting Cutaneous and Oral Manifestations of KS-IRIS



KS-IRIS Manifesting as Recurrent Pulmonary Effusion



Manifestations of Fulminant KS-IRIS



Results (Continu

- Of 30 participants with at least 8 observation, median age was 33 43 percent were women, and m pre-ART CD4+ T cell count was
- 17 participants (57%) developed sign/symptom compatible with K
- Among those with suspected KS findings were varied and, in cuta lesions, included swelling, pain/p and erythema/warmth.
  1. Swelling — 76%
  2. Pain/paresthesia — 59%
  3. Erythema/warmth — 41%
- There were visceral manifestatio one participant, in the form of a symptomatic pleural effusion.
- In another participant, marked s developed, a suspected KS-IRIS isolated to the lymphatics.
- Most participants had improvem additional interventions.
- Death occurred in one participan what was likely fulminant cutane It is not known if the KS-IRIS co to death.

Conclusions/Implic

- In sub-Saharan Africa, KS-IRIS clinically relevant frequency.
- The manifestations of KS-IRIS a heterogeneous and difficult in re distinguish from natural KS dise progression, thereby complicatin management.
- While findings of suspected KS-I self-limiting, sometimes they are underscoring the importance of real-time diagnostic tests to diff inflammatory-based (which is m be self-limiting) from natural pro KS (which will likely require add for resolution).

Acknowledgeme

Many thanks to all the wonderful people and study p Infectious Diseases Institute in Kampala, and to the the UCSF Department of Epidemiology and Biostatist I would also like to express gratitude to the Doris D Foundation for funding this amazing international ex much appreciation to Joel Palefsky, Peter Chin-Hong, Cecily Hunter and Marlene Berro.

What Is the Optimal Interval of Mammography following Lumpectomy?

VA Arasu[1]; BN Joe[1]; NM Lvoff[1]; JWT Leung[1]; RJ Brenner[1]; C Flowers[2]; B Chang[1]; EA Sickles[1]

[1]Department of Radiology and Biomedical Imaging, Division of Women's Imaging, [2] Department of Women's Health, University of California, San Francisco USA

Introduction

Lumpectomy is standard treatment for early breast cancer

- Conserves breast through local excision of cancer
- Used in stage 0 – stage 2 breast cancer
- Equivalent efficacy to mastectomy

Patients have a high risk for recurrence

- Baseline risk of breast cancer in healthy women: 0.5% per year
- Recurrence risk after lumpectomy: 1-2% per year
- Patients with recurrence have 3x mortality rate
- Higher stage recurrence predicts worse prognosis
- Stage 2 recurrence has 50% worse prognosis than stage 1

Optimal interval for surveillance is unknown

- Clinical exam and mammography best methods to detect recurrence
- No evidence for interval using mammography
- Interval is variable in clinical practice
  - Cancer organizations: Every 12 months
  - UCSF: Every 6 months for 5 years

Research Question

- In lumpectomy patients at UCSF, do mammograms at 6-month intervals detect cancers earlier?

Methods

Patients and Data Collection

- Retrospective review from 1997 – 2008 of mammograms following lumpectomy
- Collected from UCSF Mammography Database
- Predictor: 6-month or 12-month interval is time between the last negative mammogram and positive mammogram that detects recurrence (Fig. 1)
- Study Endpoint: Cancer recurrence using TNM staging criteria

Methods (continued)

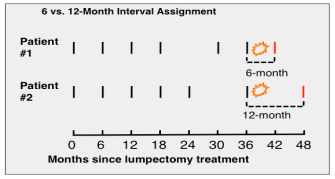


FIG. 1. Dashes represent a hypothetical pattern of mammograms, with black corresponding to negative interpretations and red corresponding to positive interpretations. Orange symbols represent cancer recurrence. All patients at UCSF are recommended to have a post-lumpectomy mammogram every 6 months for 5 years. Assignment is based on compliance with this protocol. Patients may be assigned to either group. Final assignment is based on the the interval between the last negative mammogram and the positive mammogram that detects recurrence.

Statistical Analysis

- Fisher's exact test comparing the proportions in stage 0+1 vs. stage 2+3+4
- A threshold between stage 1 and 2 chosen *a priori* because it represents the largest drop in prognosis

Results

Patient Characteristics

- 2,329 women, 10,750 exams identified
- 8,421 mammogram exams included
- 2,545 exams excluded
- No significant baseline differences in risk of breast cancer by age, family history

Cancer Recurrence

- 109 recurrences over 5 years (Table 1)
- No recurrences beyond stage 2
- 1.3% vs. 1.2% recurrences/yr in 6 vs. 12-month

	Stage 0 (%)	Stage 1 (%)	Stage 2 (%)
6-month	31 (33%)	57 (61%)	6 (6%)
12-month	4 (27%)	7 (47%)	4 (27%)

Results (continued)

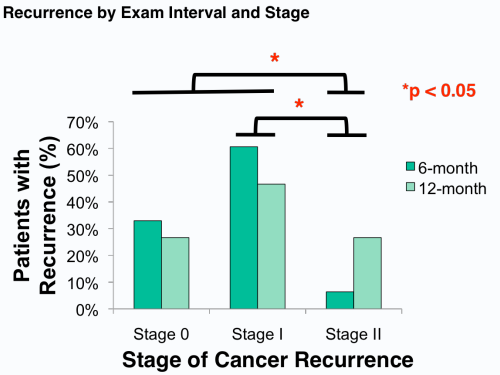


FIG. 2. Cancer recurrences detected at 6-month intervals were significantly earlier stage than recurrence detected at 12-month intervals. This relationship continued to hold after non-invasive recurrences (Stage 0) were excluded.

Conclusion

- Mammogram exams at 6-month intervals detects recurrence significantly earlier
  - Number needed to screen (NNTS) = 81 to prevent stage 0/1 ➔ stage 2
- Recurrences detected and treated at earlier stage may lead to better overall survival
- Ffirst evidence that 6-month exam intervals following lumpectomy is optimal
  - May change guidelines by cancer organizations
  - Establishing clinical efficacy will require an RCT

Acknowledgments

This research was supported by an NIH TL1 RR024129 and Doris Duke Charitable Foundation Award #2007084.

Many Thanks to Joel Palefsky, Peter Chin-Hong. Cecily Hunter and Marlene Berro

Define your message

All visuals and text should relate to a succinctly stated message.

Know your message! What is the *one* thing you want your audience to learn?

Be bold & be explicit.

- If you have an interesting result, state it explicitly in the title

The Effect of X on Y
or ***Substance X Induces Y-cells***

- **Make the strongest statements your data will support**
  Why soft-peddle exciting findings?

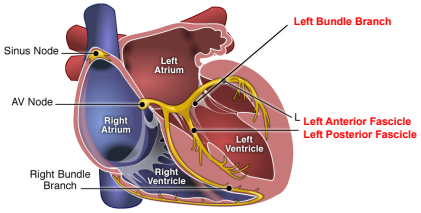
Long-Term Complications of Isolated Conduction Disease in the Left Bundle Branch

Mala C. Mandyam[1], Elsayed Z. Soliman[2], Susan R. Heckbert[3], Eric Vittinghoff[4], Thomas A. Dewland[1], Gregory M. Marcus[1]

[1]Electrophysiology Section, Division of Cardiology and [4]Department of Epidemiology and Biostatistics, University of California at San Francisco, San Francisco;
[2]Department of Epidemiology and Prevention, Wake Forest University School of Medicine, Winston Salem;
[3]Department of Epidemiology, University of Washington, Seattle.

Introduction

- The left bundle branch delivers and coordinates impulse conduction in the left ventricle of the heart.



- Conduction disturbances of the left bundle branch are found in over 5% of the elderly population.
- When found in older individuals without overt clinical cardiovascular disease, isolated left bundle branch conduction delay likely results from an aging and fibrosed conduction system.
- This is known as Lev's or Lenegre's disease, and it may reflect a general propensity to fibrosis in the heart.
- It is unknown whether left bundle branch conduction delay found in isolation is associated with an increased risk of atrial fibrillation (AF) and congestive heart failure (CHF) - clinical conditions that are associated with atrial and ventricular fibrosis, respectively.

Specific Aim:

To determine whether conduction disturbances of the left bundle branch, including left bundle branch block (**LBBB**), and left anterior (**LAFB**) and left posterior (**LPFB**) fascicular block, are associated with development of AF, CHF, and risk of death in an elderly population free of overt clinical cardiovascular disease.

Methods

- Study population: the **Cardiovascular Health Study (CHS)**
  - An NHLBI-sponsored cohort established in 1989
  - Sampled from Medicare county lists from CA, PA, NC, and WA states
  - Includes 60% women, >10% African-American
  - Semi-annual patient contact starting in 1989 and continuing today
- Exclusion criteria: baseline myocardial infarct, CHF, AF, coronary heart disease, diabetes, and hypertension
- LBBB, LAFB, and LPFB were assessed for on baseline 12-lead electrocardiograms (ECGs) done on all participants.
- Incident AF, CHF, and death were obtained via clinic visits, patient contact, obituaries, and discharge diagnoses.

Statistical Analysis

- Continuous variables compared using Wilcoxon Rank-Sum and Student's T tests; categorical variables compared using Fisher's Exact test.
- We used Cox proportional hazards models to obtain unadjusted and multivariable adjusted hazard ratios (HR) and 95% confidence intervals (CI).

Results

- After excluding participants with baseline clinical heart disease, 2,354 individuals remained for analysis (**Table 1**).
- Four hundred and seventy four cases of AF occurred over 16 years of follow-up, while 501 participants developed CHF and 1,415 died over 19 years of follow-up.
- Participants with LAFB and LBBB had significantly worse event-free and overall survival (**Figure 1**)

Table 1: Baseline Characteristics of Participants without Clinical Heart Disease in the Cardiovascular Health Study

Variable	No Conduction Disease (REF) (n=2,212)	LAFB (n=54)	LPFB (n=5)	LBBB (n=24)
Age in years	71 (68-75)	73 (68-80)†	79 (67-74)	73.5 (69-79)
Male	845 (38%)	37 (69%)†	0 (0%)	7 (29%)
Race				
White	1,984 (90%)	47 (87%)	4 (80%)	22 (92%)
Black	214 (10%)	7 (13%)	1 (20%)	2 (8%)
Body mass index	25.7 ± 4.2	26.1 ± 0.6	27.3 ± 1.9	25.1 ± 0.5
Current smoker	308 (14%)	9 (17%)	2 (40%)	0 (0%)

Variables reported as median (interquartile range), mean ± standard deviation, or number (percentage)
†p<0.05 compared to reference group

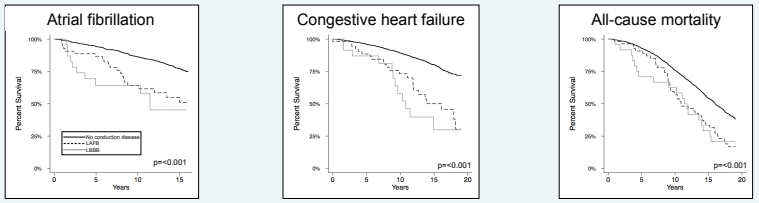


Figure 1. Unadjusted survival curves for atrial fibrillation, congestive heart failure, and all-cause mortality among individuals with no conduction disease, left anterior fascicular block (LAFB), and left bundle branch block (LBBB). Survival curves compared using log-rank tests.

LAFB was associated with AF, CHF and death prior to adjustment, and with AF and CHF after adjustment (**Table 2**). LBBB was associated with AF, CHF, and death both prior to and after adjustment.

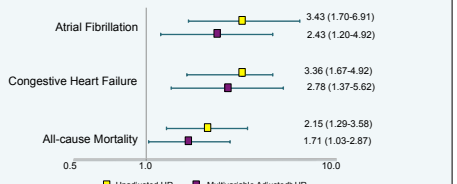
Table 2: Unadjusted and Adjusted Hazard Ratios* with 95% Confidence Intervals

Predictor	Atrial Fibrillation		Congestive Heart Failure		Death	
	Unadjusted	Adjusted†	Unadjusted	Adjusted†	Unadjusted	Adjusted†
LAFB	2.67 (1.72-4.15)	1.76 (1.12-2.75)	3.04 (2.00-4.63)	2.07 (1.34-3.18)	1.86 (1.38-2.51)	1.21 (0.89-1.65)
LPFB	1.38 (0.19-9.83)	1.94 (0.27-13.89)	2.46 (0.61-9.86)	3.14 (0.78-12.72)	1.20 (0.38-3.71)	1.75 (0.56-5.47)
LBBB	3.79 (2.08-6.90)	3.47 (1.90-6.34)	4.49 (2.53-7.98)	4.12 (2.31-7.36)	2.01 (1.28-3.16)	1.91 (1.21-3.01)

*Compared to individuals without any conduction disease
†Adjusted for age, race, sex, BMI, and smoking status

A sensitivity analysis using an alternative definition of LAFB established by the American Heart Association did not meaningfully change associations, despite this more conservative criteria **(Figure 2)**.

Figure 2. Hazard Ratios[a] (HR) and 95% Confidence Intervals for LAFB Defined by American Heart Association



[a] Compared to individuals with no conduction disease
[b] Adjusted for age, race, sex, body mass index, smoking status

Conclusions

- LAFB and LBBB are independently associated with risk of AF and CHF in an elderly population without clinical heart disease.
- LBBB is independently associated with death in this population.
- Isolated left bundle conduction disease may be a marker of diffuse myocardial fibrosis.
- In healthy individuals these conduction delays may lead to ventricular dyssynchrony and worsening heart function with remodeling.

Translation – Next Steps

- ECG screening in asymptomatic elderly individuals could identify individuals at increased risk for AF, CHF, and death
- Treatment for secondary prevention of AF and CHF in healthy individuals with isolated conduction delay may play a role.
- Further studies are needed to establish the associations uncovered here and to examine the mechanisms underlying them.

Acknowledgement

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Predictors of Persistently Active Rheumatoid Arthritis (PARA) in a Diverse, Dual-Center Longitudinal Cohort

Anisha Chandra Schwarz[1], Julie Baker-LePain[2], John Imboden[2], Mary C. Nakamura[2]

[1]UCSF School of Medicine, [2] Department of Medicine, University of California, San Francisco, CA

BACKGROUND

Patients with rheumatoid arthritis (RA) respond variably to treatment regimens, and it is not known if we can identify patients at most risk for developing persistently active rheumatoid arthritis (PARA). The American College of Rheumatology (ACR) recommends treating patients to remission or low disease activity, as assessed by measures such as the Disease Activity Scale (DAS) and Clinical Disease Activity Index (CDAI). However, some patients do not reach this goal, despite treatment with multiple medications.

We studied patients with PARA in the University of California, San Francisco RA Cohort, a continuous-enrollment, longitudinal observation cohort of over 700 adults with diagnosed RA at the main Parnassus campus and at San Francisco General Hospital.

Prior studies showed that rheumatoid factor (RF), anti-cyclic citrullinated peptide (anti-CCP) antibodies, presence of baseline bone erosion, and genetic factors correlate with poor prognosis in RA. Previous studies of the UCSF RA cohort suggest that patient function and outcomes are affected by ethnic and socioeconomic status. We therefore examined both biological and socioeconomic parameters in the present study.

AIM

Our objective was to identify predictors of persistently active rheumatoid arthritis (PARA) in the UCSF RA cohort.

METHODS

705 patients in the UCSF Rheumatoid Arthritis Cohort (Parnassus & San Francisco General Hospital)

334 patients:
- Anti-CCP+ (RF+ if no CCP)
- At least 3 visits within 42 months with recorded disease activity scores

PARA: n=122 3 consecutive values of DAS > 3.2 and CDAI ≥ 10

Variable RA: At least 1/3 values of DAS ≤ 3.2 or CDAI < 10 and 1/3 values of DAS > 3.2 or CDAI ≥ 10)

Controlled RA: n=59 3 consecutive values of DAS ≤ 3.2 or CDAI < 10

Final comparison **(n=181)** was **PARA vs. Controlled RA** for parameters:

Age, Gender, Disease Duration, Ethnicity, Education, Immigrant Status, RF Titer, Smoking, Medication Use, English Proficiency

PARA = Persistently Active Rheumatoid Arthritis, Anti-CCP = Anti-Cyclic Citrullinated Peptide antibody test, RF = Rheumatoid Factor

DATA ANALYSIS

- We analyzed all data with STATA 11.0 (StataCorp) by comparing patients with PARA to those with controlled RA
- We used either Wilcoxon (for continuous parameters) or Fisher's exact (for categorical parameters) tests to determine whether the groups were significantly different
- We then considered significant parameters (eg. ethnicity, education, English proficiency, immigrant status) or parameters that showed trends toward significance (eg. disease duration) for inclusion in a logistic regression model
- We used a backward stepwise method to choose the final parameters.

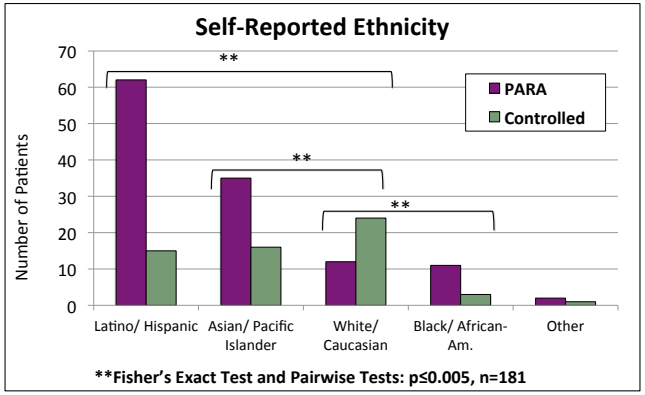
RESULTS

Patient Characteristics

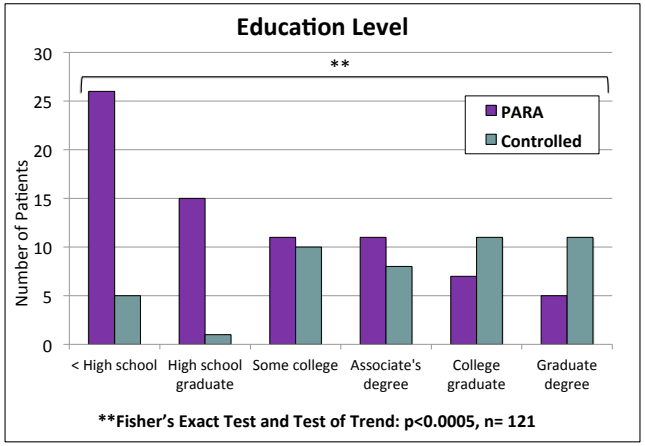
Parameter	PARA	Controlled	p-Value
Age	52.1 (13.2)	52.7 (15.5)	0.55
Disease duration	5241 (3281)	4258 (2940)	0.07
RF Titer	736 (891)	616 (631)	0.93
Female	89%	80%	0.11
Non-white ethnicity	90%	59%	**<0.005***
Limited English proficiency	78%	55%	**0.001***
Born abroad	77%	55%	**<0.005***
Currently taking prednisone	71%	37%	**<0.005***
Education ≤high school	55%	13%	**<0.005***
Currently taking biologic	44%	49%	0.63
Current smoker	12%	9%	0.78

Continuous variables are reported as Mean (SD). Categorical variables are reported as percentages.

RESULTS



**Fisher's Exact Test and Pairwise Tests: p≤0.005, n=181



**Fisher's Exact Test and Test of Trend: p<0.0005, n= 121

Multivariate Regression Model of PARA

Parameter	Adjusted Odds Ratio	Confidence Interval	P-Value
Non-white Ethnicity	4.45	1.44-13.8	**0.010**
Prednisone Use	4.29	1.58-11.64	**0.004**
Education ≤ High school	3.24	1.01-10.4	**0.049**
PHQ9 Score	1.25	1.09-1.42	**0.001**

LRX^2 = 55.74, p<0.005, n=117

- In univariate comparison, PARA patients were significantly more likely to be of nonwhite ethnicity, have limited English proficiency, be born abroad, and be taking prednisone. They were less likely to have education beyond high school (see table).
- In a multivariate regression model, nonwhite ethnicity, prednisone use, education at or below the high school level, and depression (PHQ9) were highly correlated to the presence of PARA.

CONCLUSIONS

- Ethnic and socioeconomic factors are significantly associated with PARA.
- Patients of non-White/Caucasian ethnicity may be at a higher risk for PARA, for either genetic or socioeconomic reasons.
- In addition, patients with lower levels of education or limited English proficiency may face barriers to medication adherence, including impaired literacy and low socioeconomic status.
- However, non-steroid disease-modifying anti-rheumatic drug use did not differ between the groups, suggesting that the presence of PARA was not explained by lack of access to treatment.
- Given that treatment to remission has been shown to improve outcomes in RA, these findings may help clinicians determine which RA subpopulations should have closer follow-up and intervention.
- Future studies and clinical trials should include ethnically and socioeconomically diverse subpopulations of patients because of their potentially greater risk for PARA.

ACKNOWLEDGEMENTS

We would like to thank the patients who enrolled in the RA cohort, and Vladimir Chernitskiy and Gus del Puerto for managing the RA cohort.

This project was supported by the National Center for Research Resources, the National Center for Advancing Translational Sciences, and the Office of the Director, National Institutes of Health, through **UCSF-CTSI Grant Number TL1 RR024129**. Its contents are solely the responsibility of the authors and do not represent the official views of the NIH.

Know your audience

Make your message accessible to a diverse audience.

People in your field of specialization

- No special efforts are required to attract them.

People in fields closely related to yours are worth capturing, because they can have interesting insights and perspectives about your work.

People in unrelated fields can be attracted by an accessible message, and provide valuable insights and links to distant fields.

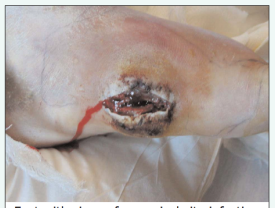
Surgical Site Infection Among Operatively Treated Orthopaedic Trauma Patients at an Urban Level I Trauma Center

Gabriel J. Martinez-Diaz[1,2], BSE, Saam Morshed[1], MD, MPH, Sarath Raju[3], MPH, Theodore Miclau III[1], MD

[1]University of California, San Francisco/San Francisco General Hospital (UCSF/SFGH) Orthopaedic Trauma Institute
[2]Stanford University School of Medicine
[3]Clinical Translational Science Institute, Biostatistics, Research Ethics And Design Program

Introduction

- Surgical site infection (SSI), a leading complication of surgery, is particularly devastating and expensive to treat when it occurs in orthopaedic surgery. Orthopedic SSIs prolong total hospital stays by a median of 2 weeks per patient, approximately double rehospitalization rates, and increase healthcare costs by more than 300%. Moreover, patients with orthopedic SSIs have substantially greater physical limitations and significant reductions in their health-related quality of life.
- In 1992, the US Centers for Disease Control (CDC) revised its definition of 'wound infection', creating the definition 'surgical site infection' (SSI) to prevent confusion between the infection of a surgical incision and the infection of a traumatic wound, as well as to create a standardized criteria of reporting SSIs across different hospital and health care centers.
- In the orthopedic trauma community, particularly in urban, level 1 trauma centers, such as th San Francisco General Hospital (SFGH), little is known about the incidence of SSIs after orthopedic surgery and unique patient-specific risk factors that may predispose them to the development of SSIs.

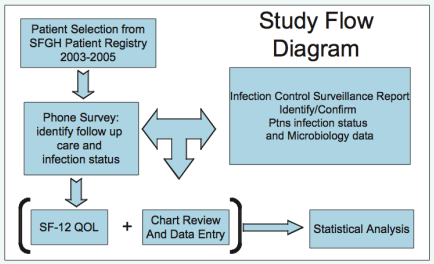


Foot with signs of a surgical site infection
(http://www.podiatrytoday.com/article/7638)

Aim

- To determine the incidence of SSI of orthopaedic patients having undergone ORIF of fractures in an urban hospital setting.
- To ascertain what are the potential risk factors among this unique study population that receives their care at an urban hospital following ORIF of fractures.

Study Methodology



- We conducted a retrospective nested case-control study using the SFGH Trauma Registry from September 2003 through August 2005 (N = 235).
- **Control group:** Defined as adult patients (age > 18 years) who had ORIF of a fracture with the use of an implant and did not develop a SSI. Controls will be a random sample taken from the entire cohort (N = 164).
- **Cases group:** Defined as adult patients (age > 18 years) treated for bone fracture(s) by ORIF with a deep and/or organ space infection that required operative intervention and/or had a positive culture within one year following surgery (N = 71).
- **Exclusion:** Patients that were treated by the podiatry service, and those with concomitant systemic infection and/or any other type.

Study Methodology (Continued)

- We first contacted patients by phone then mailed a validated quality of life (QOL) survey (SF-12).
- We calculated NNIS Risk and Charlson Comorbidity Indices (CCI) to describe this population.
- We determined independent risk factors for SSI using multivariate logistic regression.
- We estimated the Incidence of SSI within one year of surgery 1) using all SSI cases at follow-up and 2) extrapolating the proportion of SSI cases amongst the self-reported group.

Data Analyses

- We analyzed categorical data using chi-square and Fisher's exact tests as appropriate; continuous variables were tested with the Mann-Whitney test.
- We used logistic regression to analyze the relationship between clinical and demographic factors and the risk for infection following surgery.
- We used linear regression to measure the associations between clinical and demographic, along with physical and mental health scores (as measured by the SF12).

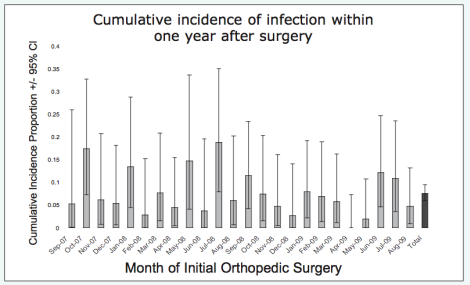
Results

- We found the three most common bacterial cultures amongst SSIs to be:
  - Staphylococcus Aureus (resistant to both Methicillin and Naficillin)
  - Enterobacter Cloacae
  - Pseudomonas Aeruginosa
- We found the following independent risk factors to be associated with SSI development: dementia, liver disease, smoking, number of surgical procedures, and number of days post-surgery until discharge.

Multivariate Logistic Regression Analysis Results

Variable	*Value*	*# infected Status/ # subgroup (% infected Status)*	*Odds Ratio*	*Lower 95% CI*	*Upper 95% CI*	*P-Value*
Dementia	0	50/204 (25%)	1.00			
	1		5.00	1.26	19.7	0.022
Liver Disease	0	46/195 (23.6%)	1.00			
	1	25/37 (67%)	3.70	1.11	12.3	0.033
Smoking	0	26/131 (20%)	1.00			
	1	45/101 (45%)	3.60	1.51	8.40	0.004
Number of Procedures	One	6/114 (5.3%)	1.00			
	Two	19/46 (41.3%)	14.5	3.90	55	<0.0001
	Three	13/25 (52%)	25	5.90	108	<0.0001
	Four or more	33/47 (70.2%)	35	7.70	132	<0.0001
Number of Days Post Surgery		71/232 (30.6%)	1.07	1.02	1.11	0.0029

Results (Continued)



- Number of procedures performed appears to be the most significant risk factor associated with the development SSI.
- We determined no significant associations between qualitative SSF12 measurements and SSI development, possibly due to sample size limitations.
- We did not find significant results for the following risk factors:
  - Open vs. Closed Fracture Status, Diabetes, Peripheral Vascular Disease, Obesity, Diabetes Related End-Organ Damage, Number Of Blood Transfusion
- The results show a broad range for SSI incidence within one year after surgery (7.7 -14.6%).

Conclusions

- This is the first study that reports the incidence of SSI after orthopedic trauma and surgical repair in a Level 1 county hospital.
- Compared with previous estimates in academic and community hospitals, we report a higher incidence of SSI (2 percent vs. 8 percent).
- Most risk factors identified were non-modifiable attributes: medical comorbidities and surrogates of injury severity.
- This study highlights unique characteristics of an urban trauma center population that may be helpful in identifying high-risk patients though further work will be necessary prospectively assess clinical strategies to reduce this high rate of infectious complications.
- Study limitations: limited SF-12 response rate, lack of precise case vs. control incidence measurement, and difficulty in obtaining qualitative measurements.

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Contact information: Gabriel J. Martinez-Diaz, gjmd@stanford.edu

Breastfeeding and the risk of malaria among children born to HIV-infected mothers

Neil Vora[1], Jaco Homsy[2], Emmanuel Arinaitwe[3], Taylor Sandison[4], Abel Kakuru[3], Humphrey Wanzira[3], Julius Kalamya[2], Moses Kamya[3], Jordan Tappero[2], Grant Dorsey[5]

[1]School of Medicine, University of California, San Francisco, [2]Centers for Disease Control-Uganda, [3]Makerere University Medical School, Kampala, Uganda, [4]University of Washington Medical School, [5]Department of Medicine, University of California, San Francisco

Introduction

- The benefits of breastfeeding are well-established, particularly in protecting infants against infectious diseases such as diarrheal illnesses
- In Africa, malaria is a major cause of childhood death, but whether or not breastfeeding reduces the risk of malaria is unknown
- Breastfeeding also represents a major mode of mother-to-child HIV transmission
- The optimal duration that children of HIV-infected mothers living in resource-limited settings should breastfeed is uncertain
- Current World Health Organization recommendations under these circumstances are for:
  - HIV-exposed children (HIV-uninfected children born to HIV-infected mothers) to breastfeed exclusively for the first 6 months of life followed by complete breastfeeding cessation
  - HIV-infected children to breastfeed exclusively for the first 6 months of life followed by introduction of complementary foods with continued breastfeeding for as long as desired

Aim

To investigate whether breastfeeding reduces the risk of malaria among children born to HIV-infected mothers.

Methods

Study design: This study was conducted as part of a larger longitudinal cohort study

Site: Tororo, Uganda, a rural area of high malaria transmission

Patients: Enrollment occurred between August 2007 and April 2008. Convenience sampling was used to enroll 201 HIV-exposed infants between 6 weeks and 9 months of age (all of whom had to be breastfeeding) and 50 HIV-infected infants between 6 weeks and 12 months of age.

Follow-up: At enrollment, all study participants were given trimethoprim-sulfamethoxazole (TMP-SMX) prophylaxis (per WHO guidelines) and an insecticide treated bed net. Study participants agreed to come to the study

Methods (Continued)

treatment using a standardized protocol. Malaria was treated with artemisinin-based combination therapy. Participants were seen at least once per month for routine assessment. Study participants were advised to breastfeed per WHO guidelines.

Data collection: Date of breastfeeding cessation was determined using monthly questionnaires. Malaria was diagnosed when a child presented with a fever and a positive thick blood smear.

Data Analysis

- Observation period in this study began once a study participant was at least 6 months of age.
- Observation period in this study ended when a participant:
  1) reached 15 months of age
  2) reached the last day of follow-up, April 30, 2008
  3) was prematurely withdrawn from the study
  4) was randomized to stop TMP-SMX prophylaxis after breastfeeding cessation (only applicable to HIV-exposed children)
- Risk of malaria among children breastfeeding and not breastfeeding was assessed in two separate age strata (6-<9 months and 9-<15 months) while adjusting for age within each stratum.

Results

Table 1. Patient follow-up

Characteristics	HIV-exposed (n=189)	HIV-infected (n=45)
Age at start of observation (%)		
6 mo	132 (70)	22 (49)
>6-12 mo	57 (30)	23 (51)
Age at end of observation (%)		
6-<15	173 (92)	33 (73)
15	16 (8)	12 (27)
Median duration of follow-up, mo (IQR)	3.1 (2.0-5.0)	3.3 (2.1-5.7)

Table 2. Breastfeeding characteristics

BF status throughout observation period	HIV-exposed	HIV-infected
# stopped BF before observation period	19	7
# stopped BF during observation period	112	1
# did not stop BF during observation period	58	37

Results (Continued)

Table 3. Breastfeeding and risk of malaria among HIV-exposed children

	Cases of malaria	Person-time (yrs)	Incidence	RR* (95% CI)	P-value
6-<9 months					
Breastfeeding	18	13.85	1.30	1.17 (0.61-2.25)	0.63
Not breastfeeding	22	16.11	1.37		
9-<15 months					
Breastfeeding	6	7.77	0.77	0.32 (0.14-0.70)	0.004
Not breastfeeding	47	17.09	2.75		

*Relative risk for breastfeeding versus not breastfeeding, adjusted for age

- The incidence of malaria was similar between HIV-exposed children between 6-<9 months of age who were breastfeeding versus not breastfeeding
- HIV-exposed children between 9-<15 months of age experienced fewer episodes of malaria while breastfeeding compared to not breastfeeding

Table 4. Breastfeeding and risk of malaria among HIV-infected children

	Cases of malaria	Person-time (yrs)	Incidence	RR* (95% CI)	P-value
6-<9 months					
Breastfeeding	5	4.76	1.05	0.75 (0.11-4.90)	0.76
Not breastfeeding	1	0.67	1.49		
9-<15 months					
Breastfeeding	7	6.42	1.09	0.31 (0.11-0.89)	0.03
Not breastfeeding	10	2.59	2.59		

*Relative risk for breastfeeding versus not breastfeeding, adjusted for age

- The incidence of malaria was similar between HIV-infected children between 6-<9 months of age who were breastfeeding versus not breastfeeding
- HIV-infected children between 9-<15 months of age experienced fewer episodes of malaria while breastfeeding compared to not breastfeeding

Conclusions

- Breastfeeding may protect against malaria among children born to HIV-infected mothers between the ages of 9 and months and who are also taking TMP-SMX prophylaxis
- These findings suggest that:
  - HIV-exposed children in resource-limited settings wit high rates of malaria transmission may benefit from breastfeeding beyond 6 months of age
  - HIV-infected children are at risk of early cessation of breastfeeding but their caregivers should be encouraged to continue breastfeeding, if feasible

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Association of Pericardial Fat Volume and Coronary Atherosclerotic Plaque Burden Measured by CT Angiography

Zlatko Devcic[1], Maria Clara N. Lorca[2], Sahand Sohrabi[2], Karen G. Ordovas[2]

[1]UCSF School of Medicine, [2] Department of Radiology and Biomedical Imaging, University of California, San Francisco, CA

CTSI

BACKGROUND

- Coronary artery disease is the leading cause of death among adults in the USA, causing 1 of every 5 deaths with a mortality of almost half a million per year.
- The societal cost of CAD events will continue to increase alongside the growing epidemic of obesity, metabolic syndrome, and diabetes.
- The traditional risk factors used to identify individuals at risk include age, sex, smoking, lipid levels, and blood pressure, however, research has shown that using traditional risk factors results in under treating patients at risk, especially those that are asymptomatic, and over treating patient's that will not have an atherosclerotic event.
- The traditional scoring system is helpful at the population level, but there is a need to develop more effective tools for the early diagnosis of CAD at the individual patient level.
- Recent research has suggested that regional fat deposits, including epicardial fat, may have local inflammatory and immunologic activity on atherosclerosis through paracrine and vasocrine activity. In cardiovascular disease states the epicardial fat may expand and become hypoxic, initiating the expression of genes and inflammatory markers that recruit phagocytic cells, macrophages, and T-cells. These molecules and signaling events may also reach the arteries underneath and promote atherosclerosis and vasoconstriction.
- Identification of strong predictors of coronary artery disease, independent of the Framingham risk factors, has been an important object of extensive clinical research.
- Recent studies have shown that pericardial fat is an independent variable for severity of CAD, high calcium score, and cardiovascular events.

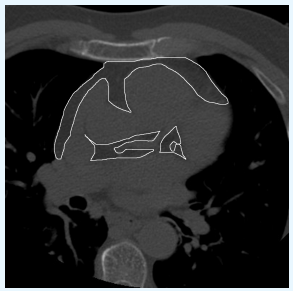
AIM

To assess the association between the pericardial fat volume and the coronary artery plaque burden

METHODS

- We retrospectively identified all adult patients referred for coronary CTA at UCSF from 2006 to 2011.
- A cohort of 117 consecutive patients with low to intermediate risk for coronary artery disease referred for coronary CTA evaluation were included in the study.
- Non-contrast enhanced CT images of the chest were used for measurement of pericardial fat volume.
- Pericardial fat areas were manually outlined on axial slices from 15 mm above to 30 mm below the origin of the left main coronary artery, and the total area was multiplied by the slice thickness of 2.5mm.
- Burden of coronary artery disease was determined as the number of coronary segments with any degree of atherosclerotic change. A lesion with higher than 50% stenosis was considered hemodynamically significant.
- Demographic and cardiovascular risk factor data were obtained from chart review.

Measurement of Pericardial Fat on CT



DATA ANALYSIS

- Distribution of pericardial fat in patients with and without significant stenosis were compared using Mann-Whitney test.
- Logistic regression models were fitted with presence of significant stenosis and burden of atherosclerotic disease as the outcomes, controlling for known cardiovascular risk factors including BMI, age, gender, hypertension, hyperlipidemia, diabetes and smoking.

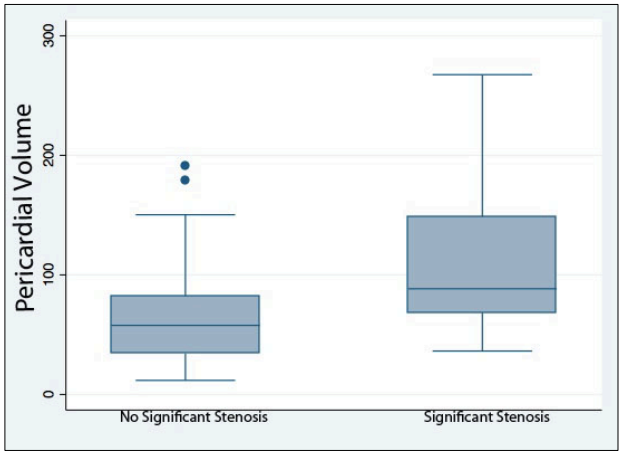
RESULTS

Patient Characteristics

Parameter	Value
Age	56 ± 14.9
BMI	25.8 ± 6.4
Males	50.4%
Hyperlipidemia	61%
Smoking	8%
Hypertension	49%
Diabetes Mellitus	14%

Continuous variables are reported as Mean (SD)
Categorical variables are reported as percentages

Pericardial Volume and Stenosis Boxplot



- Patients with a coronary stenosis >50% had significantly higher median pericardial fat volume (88.4cm^3; IQR=68.4-142.7) than patients without a significant lesion (57.8cm^3; IQR=34.1-82.3) (p=0.0001).
- A significant independent association was seen between pericardial fat volume and the presence of a significant coronary stenosis and between pericardial fat and burden of atherosclerotic disease (p=0.05). An increase in 10cm^3 of pericardial fat volume was associated with a 28% increase in the chance of having a significant stenosis.

CONCLUSIONS

- Volume of pericardial fat is independently associated with the presence of a significant coronary stenosis and a higher burden of atherosclerotic disease.

CLINICAL SIGNIFICANCE

- Quantification of pericardial FAT using CT can have an incremental role in coronary disease risk stratification compared to Framingham risk factors alone.

FUTURE DIRECTION

- Investigate the association between epicardial fat contrast enhancement with number of diseased coronary artery segments and severity of coronary artery disease.

ACKNOWLEDGEMENTS

This publication was supported by the National Center for Research Resources, the National Center for Advancing Translational Sciences, and the Office of the Director, National Institutes of Health, through **UCSF-CTSI Grant Number TL1 RR024129**. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIH."

Investigation of interprofessional collaborative patient care in clinical education: beliefs, attitudes, and experiences of physical therapy students

Amber Fitzsimmons, Kimberly Topp

Department of Physical Therapy and Rehabilitation Sciences, University of California, San Francisco

Background

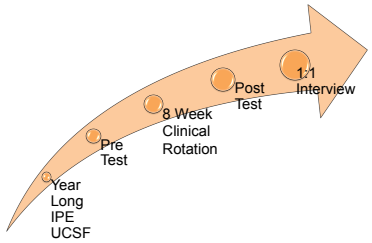
- Interprofessional education (IPE) is required to develop entry level doctorate physical therapist **who are immediately ready for collaborative practice and can deliver quality, patient centered care**
- **Clinical education models** in entry-level doctorate programs in physical therapy **are varied and inconsistent**
- Insight into physical therapy student interprofessional collaboration experiences in clinical settings will **inform the creation of interprofessional competency standards within clinical education**

Study Aims

- **Aim 1:** Describe and compare the IP collaboration and learning experiences as viewed by PT students in an inpatient and outpatient clinical setting
- **Aim 2 :** Describe the range of perceived learning that may occur during IP collaboration within the clinical setting
- **Aim 3:** Measure the change in scores (pre vs. post-test) for the three outcomes associated with interprofessional collaboration

Methods: Design

Design: Sequential mixed-method study using interprofessional socialization and valuing scale (ISVS) (n=33) and in-depth one-on-one semi-structured interviews (n=30)



Methods: Collection/Analysis

Sampling

- Rising 2nd year entry level doctoral physical therapy students were recruited after participating in a one year UCSF-wide longitudinal interprofessional education curriculum (n=33)

Data Collection

- ISVS survey was administered at end of first year curriculum, prior to departure for clinical rotation and again one week after completion of 8 week clinical rotation (n=33)
- Semi structured one-on-one interviews were completed within 12 weeks of completion of clinical rotation (n=30)

Data analysis

- Semi-structured interviews digitally recorded and transcribed
- General inductive approach and thematic content analysis to understand what constitutes effective interprofessional collaboration in the clinical setting from a learners' perspective

Results: Demographics (n=33)

Age		Gender		Setting	
		Male	Female	Outpatient	Inpatient
Median	25 years	9	24	n=23	n=10
Range	22-47 years				

Results: ISVS survey

Figure 1: Change scores associated with clinical setting

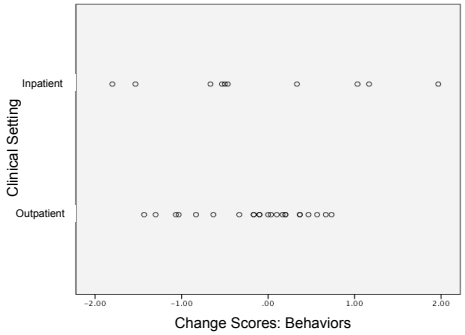


Figure 2: Change Scores in 3 Factors Associated with ISVS

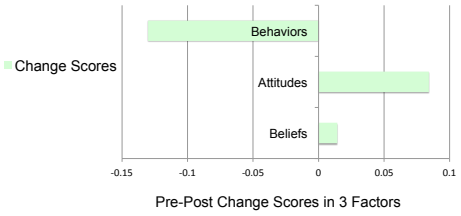


Figure 3: Significant ISVS Items Paired Samples T-Test

ISVS Scale Item	Mean	SD	*p*-value (<0.05)
Item 1: I believe IP practice Is difficult to implement	0.727	1.625	.015
Item 2: I have gained a better understanding of the client's involvement in decision making around their care	-.485	1.149	.021

Analysis

Theme: Building interprofessional relationships

Facilitates collaboration/communication

- *"…I think it kind of like opens, it makes me see them like more than just a professional. It makes me see them like a person and I can relate better to people when I know something about them. It's easier to talk to them and like see them as not just like someone you can't approach, like when they share something with you it's like they're opening up and starting that bond."* (female, age 24, outpatient facility)
- *"…But also when you get to know people you're more likely to communicate with them more…I feel when you have a good relationship with someone you're more likely to be able to talk to them instead of thinking I don't want this surgeon thinking that I don't know what I'm doing because I want to appear really competent in my job, so I don't want to ask that and I just want to figure it out for myself."* (male, age 26, outpatient setting)

Error Prevention

- *"So I think that all the departments didn't really know this doctor or they saw this doctor's name on the chart and they'd never even met this person yet and so it was a brand new physician, this physician had been practicing but new to this hospital, and so I think it was just that they hadn't taken the time to build up that relationship beforehand that we kind of talked about, and speaking with the doctor and being familiar with them and being able to recognize them, feeling comfortable to call them or page them about something… It was really a breakdown in communicating our results or findings to somebody who could really manage them, so that was too bad."* (male, age 24, inpatient setting)

Creates efficiencies

- *"I think it's important to realize that each member behind each profession in the healthcare team is an individual person, they're not just someone referring you patients. They are someone there also caring for the patients…So, it's important to kind of realize that it's not just a name, it's not just a signature, there's somebody there and the communication needs to be more comfortable and more open than just a formality where you get referred a patient through a doctor. It needs to be that you know the doctor and you trust the doctor they're going to refer you people who are appropriate."* (male, age 24, inpatient setting)

Discussion and Next Steps

- Repeated measures ANOVA revealed no statistical difference ($p<0.05$) between pre and post test scores within or between groups using ISVS scale
- Further analysis of students' perceptions that interprofessional collaboration occurs when they individually access electronic health records and hand-written patient charts
- Study limitations include: 1) self-reporting bias, 2) no baseline or control group, 3) small sample size, and 4) single institution
- Findings may assist curricular mapping of the newly released interprofessional competencies within the clinical education framework

Acknowledgments

This project was supported by the National Center for Research Resources, the National Center for Advancing Translational Sciences, and the Office of the Director, National Institutes of Health, through **UCSF-CTSI Grant Number TL1 RR024129**. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the NIH." Thank you to Kimberly Topp, Diane Allen, Bridget O'Brien and Scott Reeves. Special thanks to Dr. Peter Chin-Hong, Dr. Joel Palefsky, Cecily Hunter, Ruby Singharo, Marlene Berro, and all the faculty and colleagues in the Clinical Translational Research (CTR) program at UCSF.

What Is the Optimal Interval of Mammography following Lumpectomy?

VA Arasu[1]; BN Joe[1]; NM Lvoff[1]; JWT Leung[1]; RJ Brenner[1]; C Flowers[1]; B Chang[1]; EA Sickles[1]

[1]Department of Radiology and Biomedical Imaging, Division of Women's Imaging, University of California, San Francisco

Introduction

Lumpectomy is standard treatment for early breast cancer

- Conserves breast through local excision of cancer
- Used in stage 0 – stage 2 breast cancer
- Equivalent efficacy to mastectomy

Patients have a high risk for recurrence

- Baseline risk of breast cancer in healthy women: 0.5% per year
- Recurrence risk after lumpectomy: 1-2% per year
- Patients with recurrence have 3x mortality rate
- Higher stage recurrence predicts worse prognosis
- Stage 2 recurrence has 50% worse prognosis than stage 1

Optimal interval for surveillance is unknown

- Clinical exam and mammography best methods to detect recurrence
- No evidence for interval using mammography
- Interval is variable in clinical practice
  - Cancer organizations: Every 12 months
  - UCSF: Every 6 months for 5 years

Research Question

- In lumpectomy patients at UCSF, do mammograms at 6-month intervals detect cancers earlier?

Methods

Patients and Data Collection

•Retrospective review from 1997 – 2008 of mammograms following lumpectomy

•Collected from UCSF Mammography Database

•Predictor: 6-month or 12-month interval is time between the last negative mammogram and positive mammogram that detects recurrence (Fig. 1)

•Study Endpoint: Cancer recurrence using TNM staging criteria

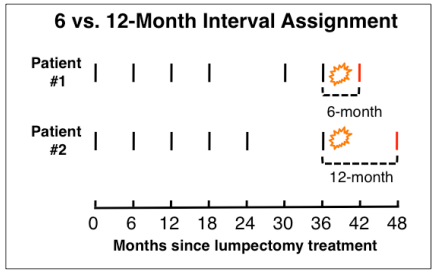


FIG. 1. Dashes represent a hypothetical pattern of mammograms, with black corresponding to negative interpretations and red corresponding to positive interpretations. Orange symbols represent cancer recurrence. All patients at UCSF are recommended to have a post-lumpectomy mammogram every 6 months for 5 years. Assignment is based on compliance with this protocol. Patients may be assigned to either group. Final assignment is based on the the interval between the last negative mammogram and the positive mammogram that detects recurrence.

Analysis

• Fisher's exact test comparing the proportions in stage 0+1 vs. stage 2+3+4

•A threshold between stage 1 and 2 chosen *a priori* because it represents the largest drop in prognosis

Results

Patient Characteristics

- 2,329 women, 10,750 exams identified
- 8,421 mammogram exams included
  - 85% were 6-month interval mammogram exams
- 2,545 exams excluded
  - Excluded exams include exam intervals > 18 months, immediately post-lumpectomy
- No significant baseline differences in risk of breast cancer by age, family history

Cancer Recurrence

- 109 recurrences over 5 years (Table 1)
- No recurrences beyond stage 2
  - 1.3% vs. 1.2% recurrences/yr in 6 vs. 12-month

TABLE 1. Cancer Recurrence by Interval and Stage

	Stage 0 (%)	Stage 1 (%)	Stage 2 (%)
6-month	31 (33%)	57 (61%)	6 (6%)
12-month	4 (27%)	7 (47%)	4 (27%)

- Mammograms at 6-month intervals detected recurrence at earlier stage (Fig. 2)
  - Stage 0+1 vs. 2 (p = 0.03)
  - Stage 1 vs. 2 (p = 0.04)
- Number needed to screen (NNTS) = 81 women to prevent one stage 0+1 recurrence from progressing to stage 2
- No significant difference by lymph node status or lesion size alone

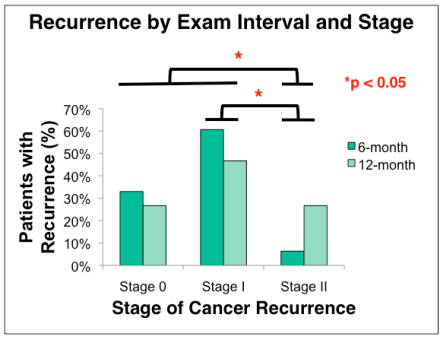


FIG. 2. Cancer recurrences detected at 6-month intervals were significantly earlier stage than recurrence detected at 12-month intervals. This relationship continued to hold after non-invasive recurrences (Stage 0) were excluded.

Conclusion

- Mammogram exams at 6-month intervals detects recurrence significantly earlier
  - Number needed to screen (NNTS) = 81 to prevent stage 0/1 → stage 2
- Recurrences detected and treated at earlier stage may lead to better overall survival
- First evidence that 6-month exam intervals following lumpectomy is optimal
  - May change guidelines by cancer organizations
  - Establishing clinical efficacy will require an RCT

Acknowledgements

This research was supported by an NIH TL1 RR024129 and Doris Duke Charitable Foundation Award #2007084

UCSF University of California San Francisco

Headings

Should include the title, section titles, and figure captions -

- **Summarize**
  Use headings as opportunities to summarize your work in large letters.
- **Organize**
  Good headings are part of the visual grammar that helps move readers through your poster.
- **Be Hierarchical**
  The more important the point, the larger the type.
- **Be Bold**
  Make the strongest statements your research allows.

Is paternal education a risk factor for preterm birth? Findings from a population-based study of California women

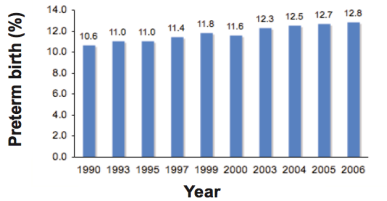
Philip Blumenshine MSc[1,3], Susan Egerter PhD[1], Moreen Libet PhD[2], Paula Braveman MD, MPH[1]

[1]University of California, San Francisco, Department of Family and Community Medicine, Center on Social Disparities in Health
[2]California Department of Public Health, MCAH Program
[3]Weill Medical College of Cornell University

Background

- The percentage of infants born preterm has risen steadily from 1990 to 2006. (Figure 1)

Figure 1. Preterm births as a percentage of live births in the United States



- Preterm birth is responsible for approximately 75% of perinatal deaths.
- Preterm infants are at increased risk for respiratory distress syndrome, chronic lung disease, injury to the intestines, a compromised immune system, and various neurological impairments.
- Socioeconomic and racial/ethnic disparities in the occurrence of preterm birth have been well-documented over the past two to three decades.
- Research on socioeconomic disparities in maternal/child health, including preterm birth, has almost exclusively used maternal socioeconomic characteristics as a proxy for socioeconomic status (SES).
- Much less is known about the influence of paternal socioeconomic characteristics on maternal/child health.
- Understanding paternal education could help explain socioeconomic disparities in preterm birth and re-conceptualize the use of SES in maternal/child health studies.

Objectives

- To describe and analyze the relationship between paternal education and preterm birth in a population-based sample of California women.

Data Analysis

- For this study, we pooled MIHA data from 1999 to 2005, yielding a sample size of approximately 21,000 individuals.
- We analyzed associations between predictor variables and preterm birth using logistic regression with adjustment for survey design.
- We developed models *a priori* based on known risk factors for preterm birth.
- We hypothesized that both marital status and race/ethnicity might modify the effect of paternal education on preterm birth and tested for interaction between these two predictors and paternal education.

Methods

- The Maternal and Infant Health Assessment (MIHA) is a cross-sectional, population-based survey conducted annually since 1999.
- MIHA is available in both English and Spanish and has been validated in both languages in diverse populations.
- Participants are randomly selected from birth certificates, stratified by education, race, and region of California and are mailed a self-administered survey.
- Response rates have been 70% or higher annually.

Results

1. From 1999 to 2005, 9.9% of women in MIHA had a preterm birth. (Table 1)

Table 1. Baseline characteristics

Variable	N (unweighted)	Preterm birth (weighted), %
Paternal education		
Completed college	4,259	7.8
Some college	3,492	9.6
High school	6,140	10.3
<High school	5,165	10.3
Missing	1,990	12.6
Maternal education		
Completed college	4,636	8.3
Some college	4,054	9.5
High school	5,832	10.3
<High school	6,097	10.9
Missing	427	9.3
Poverty status		
>400% FPL	4,085	8.4
300-400% FPL	1,379	8.7
200-300% FPL	1,957	9.4
100-200% FPL	4,339	9.4
<100% FPL	7,333	11.3
Missing	2,953	10.1
Race/ethnicity		
White	7,757	9.2
African-American	3,226	15.0
Latina - foreign-born	6,563	9.2
Latina - US-born	3,500	10.8

2. Low levels of paternal and maternal education were associated with increased unadjusted odds of preterm birth. (Table 2)
3. Poverty (<100% of the Federal Poverty Level), African-American race, and US-born Latina ethnicity were also associated with increased unadjusted odds of preterm birth. (Table 2)

Results (Continued)

Table 2. Unadjusted odds ratios

Variable	Odds ratio [95% confidence interval]	Wald test *P*-value
Paternal education		
Completed college	1.00	Ref
Some college	1.26 [1.08, 1.49]	0.004
High school	1.36 [1.18, 1.57]	<0.001
<High school	1.36 [1.17, 1.57]	<0.001
Missing	1.71 [1.43, 2.05]	<0.001
Maternal education		
Completed college	1.00	Ref
Some college	1.17 [1.00, 1.35]	0.046
High school	1.28 [1.11, 1.46]	<0.001
<High school	1.36 [1.19, 1.55]	<0.001
Missing	1.14 [0.80, 1.62]	0.47
Poverty status		
>400% FPL	1.00	Ref
300-400% FPL	1.05 [0.84, 1.30]	0.69
200-300% FPL	1.13 [0.94, 1.37]	0.20
100-200% FPL	1.14 [0.98, 1.33]	0.09
<100% FPL	1.39 [1.22, 1.59]	<0.001
Missing	1.23 [1.02, 1.49]	0.03
Race/ethnicity		
White	1.00	Ref
African-American	1.74 [1.53, 1.98]	<0.001
Latina - foreign-born	1.00 [0.90, 1.13]	0.95
Latina - US-born	1.19 [1.04, 1.36]	0.009

4. Being/living as single at delivery, delivering a first birth, having delivered more than four births, having delivered a previous preterm birth, and maternal smoking during pregnancy were associated with increased unadjusted odds of preterm birth.

Table 3. Multivariable model

Variable	Odds ratio [95% confidence interval]	Wald test *P*-value
Paternal education		
Completed college	1.00	Ref
Some college	**1.22 [1.02, 1.47]**	**0.03**
High school	**1.21 [1.01, 1.46]**	**0.04**
<High school	**1.26 [1.02, 1.56]**	**0.03**
Missing	**1.35 [1.06, 1.71]**	**0.02**
Maternal education		
Completed college	1.00	Ref
Some college	1.01 [0.84, 1.21]	0.92
High school	1.05 [0.87, 1.26]	0.93
<High school	1.14 [0.93, 1.41]	0.21
Missing	0.91 [0.61, 1.35]	0.63
Poverty status		
>400% FPL	1.00	
300-400% FPL	1.01 [0.80, 1.27]	0.93
200-300% FPL	1.03 [0.83, 1.26]	0.81
100-200% FPL	0.95 [0.79, 1.15]	0.62
<100% FPL	1.06 [0.87, 1.29]	0.55
Missing	1.02 [0.82, 1.26]	0.88
Race/ethnicity		
White	1.00	Ref
African-American	1.43 [1.24, 1.66]	<0.001
Latina - foreign-born	0.88 [0.75, 1.02]	0.09
Latina - US-born	1.04 [0.90, 1.21]	0.57

The model included the variables above, as well as marital status, maternal age, parity, smoking, and previous preterm birth.

5. In multivariate models, low levels of paternal education remained significantly associated with increased odds of preterm birth after adjustment for confounders, while low levels of maternal education and poverty did not. (Table 3)

Table 4. Multivariable model: Stratified by marital status

	Unmarried women		Married women	
Variable	OR [95% CI]	*P*-value	OR [95% CI]	*P*-value
Paternal education				
Completed college	1.00	Ref	1.00	Ref
Some college	**1.71 [1.03, 2.87]**	**0.04**	1.23 [1.01, 1.49]	0.04
High school	**2.35 [1.44, 3.85]**	**0.001**	1.01 [0.81, 1.25]	0.96
<High school	**2.46 [1.48, 4.09]**	**0.001**	1.03 [0.78, 1.35]	0.86
Missing	**2.33 [1.41, 3.86]**	**0.001**	1.85 [1.04, 3.29]	0.04

6. There was significant interaction between marital status and paternal education (Adjusted $F(4, 20879)=3.60$, $P=0.006$); the association between preterm birth and paternal education was greater among unmarried women than among married women. (Table 4)

Conclusions

- Low levels of paternal education are a significant risk factor for preterm birth in our sample, particularly among unmarried women.
- In contrast to paternal education, maternal education and poverty status were not important predictors of preterm birth.
- Our results suggest that exclusive use of maternal socioeconomic characteristics as a proxy for SES may be overly simplistic.
- Researchers and policymakers conducting studies of adverse birth outcomes should collect and use paternal and maternal socioeconomic information to create a more complete measure of SES.

Acknowledgements:

Many thanks to:
DDCF Clinical Research Fellowship
Joel Palefsky, Peter Chin-Hong, Cecily Hunter, David Kilough, Kristen Marchi, and Marlene Berro

Creating your poster

1. Planning: Takes time
2. Focus: Keep it simple
3. Layout: Guide your readers
4. Headings: Orientation
5. Graphics: Simple and clean
6. Text: Make it large
7. Colors: Don’t overdo
8. Editing: Allow enough time

Poster Specs & Dates

Poster Specs

TLI (NIH) meeting:	36” x 36”
DDCF meeting:	42” x 42”
ARVO:	42” x 66”

2013 Meeting Dates

May 5-7:	TLI- Mayo Clinic, Rochester MN
May 5-9:	Arvo – Seattle WA
May 8:	PosterPalooza - Milberry Union
May 28-30:	DDCF – Hyatt Dulles Airport, VA

Planning Your Poster

Suggested schedule-Below are some ideas for establishing milestones. This schedule assumes that you're doing other things during the week. It also allows time for you to get feedback from collaborators and peers.

When	What
0	Present poster
-1 week	Final print
-1 week	Make changes suggested by mentor and peers
-1 week	Distribute draft for mentor AND peer review (round 2)
-2 weeks	Make changes suggested by mentor
-2 weeks	Distribute draft for mentor review (round 1)
-3 weeks	Begin to edit your draft ruthlessly
-3 weeks	Create first draft of poster
-4 weeks	Plan out poster on template or scratch paper
-4 weeks	Define message and write an abstract (if you haven't already done so)

Poster Templates

Poster resources and templates can be found at:

the CTSI website:
http://ctsi.ucsf.edu/about-us/ctsi-identity

and

The UCSF library website:
http://www.library.ucsf.edu/help/postersupport

If there is a specific template that you would like to use, please contact Marlene at:
marlene.berro@ucsf.edu

A Comparison of Longitudinal Integrated and Traditional Ob-Gyn Clerkships in Medical Student Satisfaction and Performance

Jeannette Lager MD[1], Sai-Wing Chan[1], Rebecca Falik MD[1], Anne Poncelet MD[2], Arianne Teherani PhD[3], Patricia A Robertson MD[1]

[1]University of California San Francisco Department of Obstetrics, Gynecology and Reproductive Sciences, [2]University of California San Francisco Department of Neurology,
[3]University of California San Francisco Department of Medicine

Introduction

Within the last decade, a concern about the lack of patient continuity and the fragmentation of medical student clinical experiences has prompted the design and implementation of longitudinal clerkships as an alternative to the traditional block clerkships[1-4]. Research on student satisfaction and evaluations of content knowledge and clinical skills has demonstrated that students in longitudinal clerkships typically have higher satisfaction with their clerkship experiences compared to students in traditional block clerkships, while still performing at or near the same level in clinical skills and knowledge testing[4-8]. However, few studies have examined the differences in outcomes specific to the obstetrics and gynecology clerkship, which may be particularly well-suited for a longitudinal clerkship given the importance of continuity in caring for pregnant women.

Objective

To retrospectively evaluate differences in medical student satisfaction and clinical performance between a traditional six-week Ob-Gyn clerkship and a one-year integrated longitudinal Ob-Gyn clerkship over a five year period at a major academic medical center.

Methods

- Subjects: Third-year medical students completing either a traditional or longitudinal Ob-Gyn clerkship during 2007-2012
- Student satisfaction scores for both clerkships were measured with standardized year-end questionnaires. Questions assessed included overall quality of faculty clinical teaching, resident clinical teaching and formal teaching. Also assessed was the adequacy of direct observation of clinical skills, feedback on student performance, and achievement of course objectives and the clerkship as a whole.
- Student performance was measured using shelf examination scores, clinical practice exam scores, and the proportion of students receiving of honors grades within each group
- Student satisfaction and performance were then compared between the two types of clerkships.
- For all analyses aside from the proportion of honors received. a one way analysis of variance was used to analyze of the data.
- For the proportion of honors received, a chi squared test was used.

Results

To date 71 students have completed a longitudinal Ob-Gyn clerkship. We compared their measures with those of 464 students who completed a traditional Ob-Gyn clerkship over the same time period.

- In nearly all measures of student satisfaction, students in the one-year integrated longitudinal Ob-Gyn clerkship rated the overall clerkship experience significantly higher than students in the traditional clerkship, specifically on measures of both faculty and resident clinical teaching quality, formal education quality, adequacy of direct clinical skill observation, and adequacy of performance feedback (table 1). Student evaluations of the clerkship's achievement of course objectives were not significantly different.
- Performance on the year-end clinical practice exam (CPX) was significantly higher among medical students in the longitudinal clerkship (table 2, Fig.1). However, shelf exam scores and the proportion of students receiving honors were not statistically different between the two student groups.

Table 1: Student Evaluation of Clerkship

Year-End Evaluations*:	PISCES (N=68)	Traditional (N=433)	P-value
Overall quality of faculty clinical teaching	4.38 ±0.81	3.94 ±0.98	<0.01
Overall quality of resident clinical teaching	4.16 ±0.91	3.79 ±1.07	<0.01
Quality of formal teaching	4.26 ±0.66	3.95 ±0.91	<0.01
Adequacy of direct observation of your clinical skills	4.26 ±0.84	3.66 ±1.09	<0.01
Adequacy of feedback on your performance	3.96 ±1.04	3.49 ±1.12	<0.01
Your achievement of course objectives	4.28 ±0.90	4.14 ±0.89	0.22
The clerkship as a whole	4.25 ±0.87	3.99 ±0.96	0.03

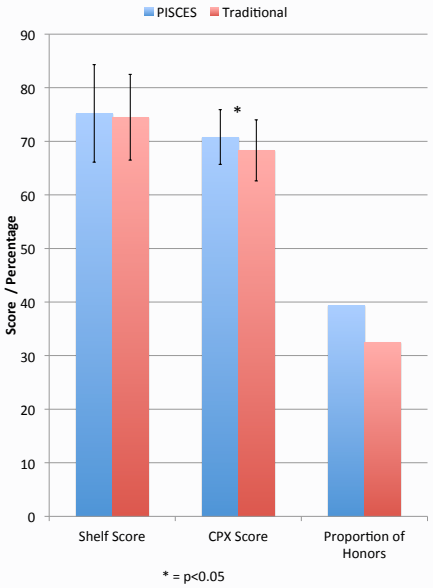
* Items scored on a 5-point scale (1 = poor, 5 = excellent)

Results

Table 2: Student Performance

Performance measure:	PISCES	Traditional	P-value
Shelf Examination score	(N=63) 75.2 ± 9.1	(N=450) 74.5 ± 8.0	0.55
Clinical Practice Exam (CPX) Score	(N=23) 70.8 ± 5.1	(N=195) 68.3 ± 5.7	0.05
Proportion of students receiving honors	28/71 (39.4%)	151/464 (32.5%)	.252

Figure 1: Student Performance



* = p<0.05

Conclusions

Compared to students in the traditional Ob-Gyn clerkship at this academic medical center, students in the one-year longitudinal integrated clerkship demonstrated:

- overall higher student satisfaction scores than the traditional Ob-Gyn clerkship
- better clinical performance as determined by the year-end clinical practice exam score
- better student satisfaction with the Ob-Gyn component of their clerkship.

The Ob-Gyn longitudinal integrated clerkship appears to be a more beneficial experience for students compared to the traditional clerkship at this academic medical center, especially with respect to clinical skills teaching, increased observation, and personal feedback. Further research is needed to determine which specific factors improve student satisfaction and learning in this longitudinal integrated clerkship environment.

References

1. Hirsh D, Gaufberg E, Ogur B, et al. Educational Outcomes of the Harvard Medical School–Cambridge Integrated Clerkship. *Academic Medicine*. 2012;87(5):643–650.
2. Institute of Medicine. Health Professions Education: A Bridge to Quality. Washington, DC: National Academy Press, 2003.
3. Poncelet A, Bokser S, Calton B, et al. Development of a longitudinal integrated clerkship at an academic medical center. *Medical Education Online*. 2011;16(0):615.
4. Walters L, Greenhill J, Richards J, et al. Outcomes of longitudinal integrated clinical placements for students, clinicians and society. *Medical Education*. 2012;46(11):1028–1041.
5. Frattarelli LC, Kamemoto LE. Obstetrics and gynecology medical student outcomes: Longitudinal multispecialty clerkship versus traditional block rotations. *American Journal of Obstetrics and Gynecology*. 2004;191(5):1800–1804.
6. Mazotti L, O'Brien B, Tong L, Hauer KE. Perceptions of evaluation in longitudinal versus traditional clerkships. *Medical Education*. 2011;45(5):464–470.
7. Hauer KE, Hirsh D, Ma I, et al. The role of role: learning in longitudinal integrated and traditional block clerkships. *Medical Education*. 2012;46(7):698–710.
8. Zink T, Power DV, Olson K, et al. Qualitative Differences Between Traditional and Rural-Longitudinal Medical Student OSCE Performance. *Family Medicine*. 2010;42(10):707-11.

Acknowledgments

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Contact Information: Sai-Wing Chan, sai-wing.chan@ucsf.edu.

Word Counts

- Approximate word counts should be as follows depending on your graphics.
- Title - not too long-convey the "issue,”
- Introduction (max 150 words)-Bullets or short paragraphs
- Methods (max 150 words)-Describe the steps used to answer your scientific question

Title Here: 60-72 pt

Authors Here: 38-40 pt

Institutions Here: 24-26 pt

Insert boxes of text, figures, tables in columns below:

Use either heading color with black or white text

Template size is 42 x 42

Introduction

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death

Specific Aims

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death
- , myocardial infarction, type 2 diabetes, and cardiovascular death

Methods

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death

Methods (continued)

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death

Statistical Analysis

• Student's *t*-test was used for comparison of continuous variables and chi-square test for proportions. Two-sided p-values were calculated for all test statistics and $p < 0.05$ was considered significant. Statistical analyses were performed using STATA Version 10 (College Station, TX).

Results

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death

Results (continued)

Graphs/tables/figures

Conclusion

- South Asians come from the Indian subcontinent, including India, Pakistan, Sri Lanka, Nepal, and Bangladesh
- Compared to other ethnicities, South Asians have at least a two-fold increased risk of cardiovascular disease, myocardial infarction, type 2 diabetes, and cardiovascular death

Acknowledgments

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Word Counts (continued)

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- Results - 250 (not counting figure legends)
  1. First, mention whether experiment worked
  2. Briefly describe qualitative and descriptive results
  3. Refer to supporting charts or images
  4. Opt for figures whenever possible
- Conclusion – 125 (can be bullets or short paragraphs)
- Acknowledgment – can be found at: http://accelerate.ucsf.edu/cite

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Introduction

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Methods

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Table 2: Example of cut and paste table

Structure	Scenario	Sample Response
Imperative intransitive	My friend comes in. I want him to sit down. So I say to him… What?	Sit down.
Declarative transitive +s	Dogs always chase cats. A dog is in the street. A cat comes along. What happens?	The dog chases the cat.
Comparative	Mrs. Jones tried to open the jar. She wasn't strong enough. So she called her husband and he did it on the first try. How come?	He was stronger.

Table 2: Example of table made in ppt

Structure	Scenario	Sample Responses
Lorem ipsum	Lorem ipsum Lorem ipsum Lorem ipsum	Lorem ipsum
Lorem ipsum	Lorem ipsum Lorem ipsum Lorem ipsum	Lorem ipsum
Lorem ipsum	Lorem ipsum Lorem ipsum Lorem ipsum	Lorem ipsum

Statistical Analysis

- We used multivariate analysis to study the numbers and types of errors produced in relation to the subjects' diagnoses.
- Since attempts at three of the syntactic constructions were consistently difficult to elicit across the groups, we chose not to include these constructions in the final analysis.

Results

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- Although they attempted a similar number of structures compared to other patient groups and controls, NFV patients performed worse (74.0%) than the other four groups; this difference was highly significant ($F(4,41)=5.94$, $p= 0.0007$).

Table 3. Attempted Items and Correct Items by Patient Group

	NFV	SV	LV	bvFTD	Controls
Avg Number of Attempted Items	12.60	11.71	12.83	14.33	17.50
Avg Percent of Attempted Items	0.57	0.53	0.58	0.65	0.80
Avg Number of Correct Items	9.33	10.57	12.17	13.83	17.42
Avg Percent of Correct Items	0.74	0.90	0.95	0.97	1.00

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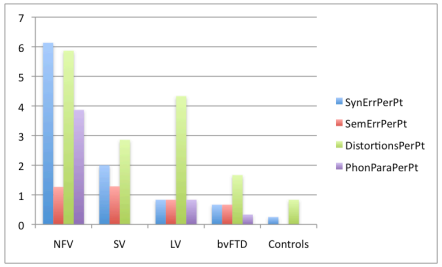
Figure 1. Types and Numbers of Errors by Patient Group



Results (continued)

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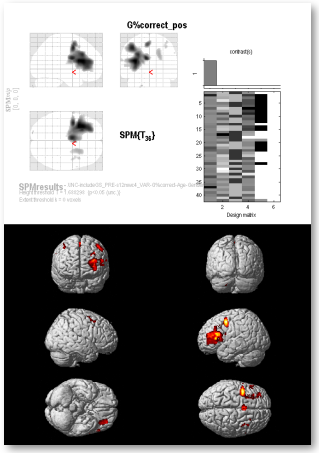
Figure 2. VBM – Syntactic Accuracy



Conclusions

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- The
- Compared to controls
- When considering all responses
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Acknowledgments

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