Weekly Calendar

9/15: Noon Report—Stump the Senior feat. Drs. Weesner, Manugian, Getreu
9/16: Noon Report—Blue Medicine, Brad Wuerfel
9/17: 7:30—9 am, Long blockers GIM #2 test MSB 6354
12p - Medical Grand Rounds: Dr. Owen McGuinness —"Impact of alpha cell dysfunction on glucose homeostasis."
9/18: Academic Half Day—GI Bleeding  Senior Prep— AHD Retainer

~September Sunshine~

“Wherever the art of Medicine is loved, there is also a love of Humanity” - Hippocrates

Anonymous Feedback

Our website has a section for anonymous feedback. Think of this like an electronic suggestion box that you can use at any time. The message will be sent directly to Dr. Warm, and is completely anonymous. If you have constructive feedback that you would like to share, please use this tool. The link is: http://intmed.uc.edu/education/residency/feedback.aspx
The first step to understanding the strengths or weaknesses of a study is to first understand the differences in study design. A Case-Control, Prospective Cohort, Retrospective Cohort, and Cross Sectional Study are each different and when trying to understand them it’s best to think about 3 things; Exposure, Outcome, and their order/timing.

Let’s say we want to know how your undergraduate performance (exposure) impacted your choice to go into an internal medicine residency program (outcome).

In a **prospective cohort study** we would start in 2006 following 100 students enrolled in the premed program at college and follow all that continue (in real time) to medical school and eventually residency all the while drawing some conclusions about how their performance in undergrad (exposures) impacted this outcome. *(Exposure to Outcome in real time)*

In a **retrospective cohort study** we would start in 2014 by looking back at enrollment records of 100 students in an undergraduate premed program in 2006 and then evaluate their transcripts, personal statements, interviews, scores, personal habits etc. hoping to make a conclusion about their time in undergrad and eventual choice in residency. *(Exposure to Outcome but by looking back in time)*

In a **case-control study** we would start in 2014 and take 100 residents - 50 internal medicine (cases) and 50 in different specialties (controls). Then we would go back and collect all the info we could from the person, undergraduate records, etc. to draw a conclusion about their exposures and its impact on them choosing internal medicine over other residencies. *(Starting with outcomes and looking back at exposures)*

In a **cross-sectional study** we might survey 100 residents (50 from IM and 50 from different residency programs) and give them a detailed questionnaire about their scores, personal habits, size of college, etc. to draw some sort of association between exposures and outcome. *(exposure and outcome at the same snapshot in time)*

Lastly, for a **RCT** you could randomize 50 premed students to drink ETOH everyday like Steven Gay and 50 premed students to spend 160 hrs in the library like Michael Hellmann without ETOH and follow them all until they choose a specific residency program trying to draw a conclusion between exposure and outcome. *(exposure to outcome with control/randomization)*

Thanks to Matt and Dr. Tolentino for presenting a great overview of the different types of research studies we encounter.

Below is a review of the concepts discussed.
Josh presented a great case of AMS 2/2 hyperammonemia related to VPA use. How does this happen? Remember the urea cycle? Me neither. It’s to the right — VPA forms toxic metabolites that inhibit the activity of carbamoyl phosphate synthetase I (CPS-1), causing a build up of ammonia.

So then why give L-carnitine?

A. VPA complexes with carnitine and causes carnitine depletion —> Low carnitine dec fatty acid metabolism which does 2 things:

1. Dec acetyl-CoA production leading to a decreased synthesis of N-acetyl glutamic acid, an allosteric activator of CPS-1

2. Shifts energy production to protein catabolism, leading to inc ammonia production.

B. Giving L-carnitine is also thought to shift metabolism of VPA away from producing the toxic metabolites that directly inhibit CPS-1


The purple team discussed a case of autoimmune hepatitis in a patient with + HCV Ab who presented with painless jaundice.

-False + anti-HCV seen with hypergammaglobulinemia

-Anti-HCV found in 44-65% of AIH pts; ANA + ASMA found in up to 65% of chronic HCV pts Should always do HCV PCR bc overlap syndromes are rare but do occur (seen in 5-10% of chronic HCV pts)

-Occurs bc antibodies for each disease are directed at different epitopes of the same antigen (CYP2D6—which is thought to be similar to viral proteins)

-Definitive dx when HCV PCR + and auto-Ab titers are high is biopsy

-Treatment implications: If overlap syndrome, should treat AIH first bc interferon treatment can worsen AIH. Similarly, patients with chronic HCV (and prior AIH) started on interferon should be monitored for AIH flares.

**Table 3. Classification of Autoimmune Hepatitis.**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic autoantibodies</td>
<td>Anti-smooth-muscle, antinuclear</td>
<td>Antibodies to liver–kidney microsome type 1</td>
</tr>
<tr>
<td>Associated autoantibodies</td>
<td>Atypical pANCA; antibodies to actin, asialoglycoprotein receptor, chromatin, soluble liver antigen</td>
<td>Antibodies to liver cytosol type 1, soluble liver antigen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature</th>
<th>Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putative autoantigen</td>
<td>Unknown</td>
<td>CYP2D6</td>
</tr>
<tr>
<td>Age</td>
<td>Infants to elderly</td>
<td>Children (2 to 14 yr of age)†</td>
</tr>
<tr>
<td>Female sex (%)</td>
<td>78</td>
<td>89</td>
</tr>
<tr>
<td>Patients with concurrent immune diseases (%)</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Typical concurrent autoimmune diseases</td>
<td>Autoimmune thyroiditis, Graves’ disease, ulcerative colitis</td>
<td>Autoimmune thyroiditis, vitiligo type 1, diabetes mellitus, APECED</td>
</tr>
<tr>
<td>Organ-specific antibodies (%)</td>
<td>4</td>
<td>30</td>
</tr>
<tr>
<td>Elevated immunoglobulins</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Glucocorticoid-responsive</td>
<td>+++</td>
<td>++</td>
</tr>
</tbody>
</table>

* Data are from Czaja. APECED denotes autoimmune polyendocrinopathy–candidiasis–ectodermal dystrophy, CYP2D6 cytochrome P450 2D6, and pANCA perinuclear antineutrophil cytoplasmic antibodies.
† In Germany and France, 20% of adult patients with autoimmune hepatitis have type 2; it is uncommon in adults in the United States.
ITE is here. Get your coverage right! Look for Joan’s email for details of where to be and when. AND GET THERE EARLY!!!!!

Upcoming Events

**September 8th, 12th, 16th, 17th:** In-Training Exam

**September 15th:** Stump the Senior Noon Report featuring Marshall Weesner, Arek Manugian, Thomas Getreu battling through a Dr Warm Whopper.

**September 17th:** Vulnerable Populations Meeting—Mecklenburg Gardens Happy Hour
TOLENTJL@ucmail.uc.edu

**September 22nd:** After Residency Symposium—Find out how to negotiate a contract, manage a mortgage, cover malpractice and pay those loans with Steve’s advisory board. RSVP by 9/15 to Bonnie Shelley at shelleb@ucmail.uc.edu

**September 30th:** Master Teacher Program—Adult Learning Theory and Learning Styles with Ben Kinnear and Jen O’Toole

Baby Leigh says...

Have a good weekend! I know I will—I’m turning 12 weeks old :)

The Stethoscope
This Weekend To-Do List—September 12th-14th

1) Cincinnati Bengals vs Atlanta Falcons
   Home Opener, 9/14 1PM

2) Cincinnati Beerfest—Fountain Square
   250 Craft Beers, 75 Vendors, 9/12-13 $15

3) ScopeOut 2014: Telescope and Education fair—all ages
   9/13 12-10PM, Cincinnati Observatory

4) Ancient Gardeners Fall Bansai Show
   Krohn Conservatory, Eden Park 9/13-14

5) Rennaisance Festival—You can’t not have fun.
   I promise —MJH and Josie. Harveysburg

Which illness are witches most prone to? Crone's disease.

Research Corner: A Slice of UC’s Cutting Edge

Drs. Warm, Mathis, Held and Tolentino will be representing University of Cincinnati at the Association of Program Directors in Internal Medicine (APDIM) conference this weekend in Washington, DC!

There, they will be leading several workshops with topics such as:

- The value of non-physician observations/evaluations

- Using direct observation techniques to assess ACGME milestones in the outpatient setting

- Bedside rounding

They will also be presenting a poster entitled: “Entrustment of Milestones Mapped to Observable Practice Activities” that outlines our evaluation system and how we have used this data to track resident entrustment over time, which was presented at grand rounds last week!
Medical Trivia

First person to email Dana, sala@ucmail.uc.edu and correctly identify this type of cell and what it produces will win a Starbucks giftcard!

Congrats to Pankti Shah for correctly naming Gottron’s papules of dermatomyositis from last week’s challenge!

SHOUT OUTS!!! (Let us know who Rocks)

- Javier Baez for being gracious in accommodating other residents with schedule changes.
- Malini Reddy, Rita Schlanger and their medical students and Josh NeCamp for doing a tremendous job with noon report this past week.
- Nikolai Wajda, Li Rowley, Keaton Jones, Rachel Foot, Owen Baldwin, Pankti Shah, Kalyn Jolivette, Hani Alkhatib, Kelly Laipply, Cam Ditty, John Melchert, Michael Northcutt, John Muriithi, Jason Martin, Jillian Wang, Kristine DeMatta, and Michael Sabbah are all our hard working residents providing coverage this month to get everyone to the in-training exam.
  - AODs (Stephen, Cory and Maggie) for running great codes and being very helpful to the other teams
  - The Bat, who has taken up permanent residence outside of the resident lounge. He’ll be presenting at noon report next week.