Papers from 2016 That Changed My Practice

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Disclosures

- No financial disclosures
- Off-label use of FDA-approved medication(s)
Case 1: Syncope

- 74 yo man admitted with unprovoked syncope. Never happened before. Episode witnessed by wife and lasted <1 minute with full recovery. No loss of continence, shaking, tongue-biting, or premonitory symptoms.
- **PMH:** HTN and T2DM
- **Meds:** Lisinopril, amlodipine, metformin
- Occasional ETOH, non-smoker.
- BP 142/80, HR 106, RR 20, afebrile
- Orthostatics unremarkable
- No murmurs, focal neuro findings, or edema
- No delta waves, epsilon waves, Brugada pattern, or long PR / QRS / QTc.
Of the following, what is the most likely cause of his syncope?

A. Carotid sinus hypersensitivity
B. Pulmonary embolism
C. Seizure
D. Transient ischemic attack
E. Ventricular tachycardia
Prevalence of Pulmonary Embolism among Patients Hospitalized for Syncope

Paolo Prandoni, M.D., Ph.D., Anthonie W.A. Lensing, M.D., Ph.D., Martin H. Prins, M.D., Ph.D., Maurizio Ciammaichella, M.D., Marica Perlati, M.D., Nicola Mumoli, M.D., Eugenio Bucherini, M.D., Adriana Visonà, M.D., Carlo Bova, M.D., Davide Imberti, M.D., Stefano Campostrini, Ph.D., and Sofia Barbar, M.D., for the PESIT Investigators*

• Pulmonary Embolism in Syncope Italian Trial
• 560 unanticoagulated patients admitted for first episode of syncope
  – Mean age 76
• 11 hospitals (2 academic, 9 community)
• Structured interview & systematic evaluation for PE (Wells, D-dimer)
Table 1. Simplified Wells Score for Assessment of the Pretest Clinical Probability of Pulmonary Embolism.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical signs or symptoms of deep-vein thrombosis</td>
<td>3.0</td>
</tr>
<tr>
<td>Alternative diagnosis less likely than pulmonary embolism</td>
<td>3.0</td>
</tr>
<tr>
<td>Heart rate &gt;100 beats/min</td>
<td>1.5</td>
</tr>
<tr>
<td>Immobilization or surgery in the previous 4 wk</td>
<td>1.5</td>
</tr>
<tr>
<td>Previous venous thromboembolism</td>
<td>1.5</td>
</tr>
<tr>
<td>Hemoptysis</td>
<td>1.0</td>
</tr>
<tr>
<td>Active cancer</td>
<td>1.0</td>
</tr>
</tbody>
</table>

* A total score of 4.0 or lower indicates that pulmonary embolism is unlikely, and a score higher than 4.0 indicates that pulmonary embolism is likely. This table was adapted with permission from Wells et al.®
2,584 ED visits for syncope
- 1,867 (72%) discharged to home
- 717 (28%) admitted
  - 157 excluded: recurrent syncope, anticoagulated
Pearl

- Elderly, unanticoagulated patients hospitalized for their first episode of syncope have a high rate of pulmonary embolism (17%), especially if the cause of syncope was not apparent (25%).

- Calculate a Wells score and check a D-dimer in this setting.
Pearl #2

- PE is also quite common in patients presenting with acute COPD exacerbations without an apparent cause
Case 2: Thrombocytopenia

- 34 yo woman admitted with petechiae and purpura. Otherwise feels well. No abuse, trauma, new meds, or quinine/tonic water
- **PMH:** not significant
- **Meds:** etonogestrel subdermal (Nexplanon®)
- Non-smoker, social ETOH
- BP 120/80, HR 70, RR 12, afebrile
- Platelets 8,000
- Rest of CBC, PT, PTT are normal
- Blood smear: no schistocytes
- ANA and HIV: negative
What is the best initial plan?

A. Dexamethasone 40 mg daily x 4 days
B. IVIG 0.4 gm/kg daily x 5 days
C. Methylprednisolone 1000 mg daily x 3 days
D. Prednisone 60 mg daily x 4 weeks
E. Rituximab 375 mg/m^2 weekly x 4 weeks
Prospective, multicenter (9), randomized, controlled, open-label trial

Exclusions: massive hemorrhage, CNS bleeding, various medical conditions

N=195
  - Conventional prednisone 1 mg/kg x 28 days, then taper
  - HD-DXM 40 mg/d x 4 days (may repeat course if Plt <30 at day 10)

Analysis: ITT

1º outcomes
  - Response (>30k + doubling of baseline + no bleeding)
  - Complete Response: >100k

2º outcomes: bleeding, time to response, duration, adverse events
Table 2. Comparison of outcomes between the 2 arms

<table>
<thead>
<tr>
<th></th>
<th>HD-DXM (n = 95)</th>
<th>PDN (n = 97)</th>
<th>P</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall response, n (%)</td>
<td>78 (82.1)</td>
<td>67 (69.1)</td>
<td>.044</td>
<td>2.054</td>
<td>1.042-4.050</td>
</tr>
<tr>
<td>CR, n (%)</td>
<td>48 (50.5)</td>
<td>26 (26.8)</td>
<td>.001</td>
<td>2.789</td>
<td>1.526-5.097</td>
</tr>
<tr>
<td>Median TTR, d (range)</td>
<td>3 (1-9)</td>
<td>6 (2-24)</td>
<td>&lt;.001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SR, n (%)</td>
<td>38 (40.0)</td>
<td>40 (41.2)</td>
<td>.884</td>
<td>0.950</td>
<td>0.534-1.690</td>
</tr>
<tr>
<td>Sustained CR, n (%)</td>
<td>26 (27.4)</td>
<td>17 (17.5)</td>
<td>.120</td>
<td>1.773</td>
<td>0.889-3.539</td>
</tr>
</tbody>
</table>

Additional therapy*, n

<table>
<thead>
<tr>
<th></th>
<th>HD-MP</th>
<th>PDN</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVIg</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>Splenectomy</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Rituximab</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Rh-TPO</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Vincristine</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Ciclosporin</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Azathioprine</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Herbs</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

IVIg, intravenous immunoglobulin; PDN, prednisone; Rh-TPO, recombinant human thrombopoietin; TTR, time to response.

*These data included ITP-modifying additional therapy administered to initial nonresponders and patients who failed to achieve sustained response.
High-Dose Dexamethasone v. Prednisone for ITP

- Baseline Plt <10 in 60% (both groups)
- No intracranial bleeding
- 29% of HD-DXM received a second course
- **Duration of Prednisone**
  - Median: 11 weeks
  - 4-12 months: 31%
  - >12 months: 8%
- **More adverse events in Prednisone group**
  - Cushingoid appearance
  - Weight gain >10%
  - HTN
  - Hyperglycemia
  - PUD

Pearls

• High-dose dexamethasone (40 mg PO daily x 4 days) should be the preferred treatment for newly diagnosed ITP in adults.

• Compared to prednisone, HD-DXM works more rapidly, more effectively, and is associated with reduced adverse effects.
Case 3: Cellulitis

- A 64 year old man was sent to the ED by his PCP for refractory leg cellulitis, right > left. There is associated erythema, warmth, and pain. He has had 1 ED visit, 1 urgent care visit, and 1 PCP visit and treatment with cephalexin, TMP-SMX, and doxycycline.

- **PMH**: HTN, T2DM, CKD4, obesity
- **Meds**: Lisinopril, amlodipine, furosemide, insulin (detemir and aspart)
- **BP**: 142/80, HR 104, RR 20, afebrile
- Both legs have areas of erythema and warmth. RIGHT lateral calf: retiform purpura. LEFT lower leg: scattered areas of discreet SC induration, which are exquisitely painful. No purulence. Bilateral tinea pedis.
- **WBC**: 9000 without left shift, Hgb 10.5, Plt 350 000
- **BUN**: 35, Cr 2.5, eGFR 25 (baseline)
RIGHT Posterolateral Calf
The next best step is?

A. Cefazolin IV
B. Vancomycin IV
C. Vancomycin and piperacillin-tazobactam IV
D. Skin biopsy
E. Bilateral leg venous duplex scans
F. Medicated compression dressing (Unna boot)
Cellulitis: Background

- Unilateral, acute onset, rapid response to ABX
- Clinical diagnosis
  - Fever and leukocytosis not required
  - Blood and skin cultures rarely revealing
- 15% of patient in the ED with cellulitis are admitted
- **Misdiagnosis rate reported between 30%-90%**
    - MGH, UCLA, UCSF, UAB
    - Cellulitis: primary team’s working diagnosis of cellulitis confirmed by Derm consult team 26% of time
Common Mimickers of Cellulitis

- Venous stasis dermatitis
- Lymphedema
- Contact dermatitis
- Gout
- DVT
- Many others
Costs and Consequences Associated With Misdiagnosed Lower Extremity Cellulitis

Qing Yu Weng, MD; Adam B. Raff, MD, PhD; Jeffrey M. Cohen, MD; Nicole Gunasekera, BS; Jean-Phillip Okhovat, MD, MPH; Priyanka Vedak, MD; Cara Joyce, PhD; Daniela Kroshinsky, MD, MPH; Arash Mostaghimi, MD, MPA, MPH

- Cross-sectional study of all patients admitted through ED (Partners HealthCare, Boston) for lower extremity cellulitis
- Included 30-day post-discharge course
- 30% misdiagnosed with cellulitis
  - 85% did not require admission based on the final diagnosis
  - 92% received unnecessary ABX
Costs of Misdiagnosis

• Mean LOS 4.8 days (25% stayed > 1 week)
• Antibiotic exposure
  – 60% received 2 or more IV ABX
  – 58% discharged on PO ABX
  – 4% discharge on IV ABX (PICC)
• 32% had complications or potentially avoidable utilization of healthcare related to ABX, hospital stay or misdiagnosis
• **National extrapolation**
  – 15,000 – 48,000 unnecessary hospitalizations
  – 66,000 – 175,000 excess inpatient days
  – $195 million to $515 million
  – 437 – 5551 cases of *C difficile* colitis

Pearls

• Misdiagnosis of cellulitis is very common and leads to unnecessary antibiotics, hospitalizations and nosocomial complications, including *C. difficile* colitis.

• Early dermatologic consultation might be prudent to improve the care of patients with suspected cellulitis if the diagnosis is not certain.
Case 4: Heart Failure

- 64 yo man with ischemic cardiomyopathy admitted with acute exacerbation of systolic heart failure after spending the winter in Florida. Compliant with his medications. Had some recent dietary indiscretions. Baseline NYHA class II. Last NSTEMI was 36 months ago, with a DES placed in the left circumflex artery. No angina since then.
- PMH: CAD s/p CABG 2006, CHF (EF 30%, 10/2016) s/p BiV-ICD
- Meds: Lisinopril 40 mg/d, carvedilol 50 mg/d, spironolactone 25 mg/d, furosemide 40 mg/d, aspirin 81 mg/d, thiamine 100 mg/d, ferrous sulfate 325 mg M/W/F
- BP 106/60, HR 64, RR 24, afebrile, 75 kg.
- JVD, basilar crackles, S3, mild leg edema
- Hgb 13, MCV 82, Cr 1.8 (baseline 1.3); NT-PBNP 19,500
You start IV diuresis. What intervention is most likely to benefit the patient at the time of discharge?

A. Add digoxin
B. Add hydralazine and isosorbide dinitrate
C. Add ivabridine
D. Switch carvedilol to metoprolol succinate
E. Switch lisinopril to sacubitril-valsartan
I (or a resident working under my direct supervision) have started a patient on sacubitril-valsartan?

A. Yes
B. No
Cost-Effectiveness of Sacubitril-Valsartan in Patients With Heart Failure With Reduced Ejection Fraction

Alexander T. Sandhu, MD, MS; Daniel A. Ollendorf, PhD; Richard H. Chapman, PhD; Steven D. Pearson, MD, MSc; and Paul A. Heidenreich, MD, MS

- Approved 2014 (PARADIGM-HF)
  - Reduces CV mortality compared with enalapril in HFrEF (stopped early), decreased HF hospitalizations and ED visits, improved QOL
  - Neprilysin inhibitors decrease the degradation of natriuretic peptides
- Scores of concordant articles in past 3 years
- Better tolerated than conventional RAS inhibitors
- Treatment adoption has been slow
- Expensive
Markov decision model

• Compared to lisinopril 20 mg (more widely used and less expensive than enalapril)
• Cohort derived from PARADIGM-HF trial
• Costs
  – Wholesale acquisition (Red Book)
  – Sacubitril-valsartan $12.50/d
• AHA and WHO
  – Very cost-effective: <$50,000 per QALY
  – Intermediate value: $50,000 to $100,000
  – Not cost-effective: >$150,000
• $47,053 per QALY at $12.50 cost/d
• Limited or no Rx coverage:
2 other analyses in 2016 showed the same
– Gaziano TA, et al. $45,017 per QALY
– King JB, et al. $50,959 per QALY
Pearl

- Compared to ACEI, sacubitril-valsartan is cost-effective in reducing cardiovascular morbidity and mortality in patients with NYHA class II to IV heart failure.
Case (continued)

• 6 months later, this same patient is admitted with NSTEMI (peak troponin 12). DES is placed in the RCA. He is found to be in rate-controlled AFIB (new) throughout his hospitalization. Estimated GFR 70.

• Meds on admission
  – Sacubitril-valsartan 97/103 mg BID, carvedilol 50 mg/d, spironolactone 25 mg/d, furosemide 40 mg/d, aspirin 81 mg/d, thiamine 100 mg/d, ferrous sulfate 325 mg M/W/F
For his discharge antithrombotic regimen (ACS with PCI, plus Afib), you recommend?

A. Aspirin 81 mg/d and clopidrogrel 75 mg/d (DAPT) + dose-adjusted warfarin (INR 2-3)
B. DAPT + rivaroxaban 20 mg QPM
C. DAPT + rivaroxaban 2.5 mg BID
D. Clopidrogrel 75 mg + rivaroxaban 15 mg QPM
Prevention of Bleeding in Patients with Atrial Fibrillation Undergoing PCI

C. Michael Gibson, M.D., Roxana Mehran, M.D., Christoph Bode, M.D., Jonathan Halperin, M.D., Freek W. Verheugt, M.D., Peter Wildgoose, Ph.D., Mary Birmingham, Pharm.D., Juliana Ianus, Ph.D., Paul Burton, M.D., Ph.D., Martin van Eickels, M.D., Serge Korjian, M.D., Yazan Daaboul, M.D., Gregory Y.H. Lip, M.D., Marc Cohen, M.D., Steen Husted, M.D., Eric D. Peterson, M.D., M.P.H., and Keith A. Fox, M.B., Ch.B.

- Must balance prevention of stent thrombosis and stroke…with risk of bleeding
  - Triple therapy with DAPT + VKA is common and standard
  - Major bleeding approximately 2% within the first month and up to 12% at 1 year

- **PIioneer AF-PCI**
  - Randomized, controlled, international, multicenter, open-label
  - Nonvalvular AF (paroxysmal, persistent or permanent) undergoing PCI
PIONEER AF-PCI

• **3 groups**
  1. Rivaroxaban 15 mg daily + P2Y₁₂ inh
  2. Rivaroxaban 2.5 mg BID + DAPT
  3. Warfarin + DAPT

• Before randomization, the investigator prespecified
  1. Intended duration of DAPT (1, 6, or 12 m)
  2. Intended P2Y₁₂ inh (clopidogrel, prasugrel, ticagrelor)

• Exclusions:
  – h/o stroke/TIA, GFR <30, significant GI bleed in last 12 mos, undiagnosed anemia with Hgb <10
White: 94%, Male: 75%
Average age: 70
P2Y$_{12}$ inh: **Clopidrogrel** 93%-96%
Stents
  – DES 65%-67%
  – BMS 31%-32%
  – Both 2%
CHA2DS2-VASc 2-7: 90%-93%
Clinically Significant Bleeding

A Primary Safety End Point

Hazard ratio for group 1 vs. group 3, 0.59 (95% CI, 0.47–0.76) P<0.001
Hazard ratio for group 2 vs. group 3, 0.63 (95% CI, 0.50–0.80) P<0.001

Cumulative Incidence of Clinically Significant Bleeding (%)

Day

No. at Risk

<table>
<thead>
<tr>
<th>Group</th>
<th>0</th>
<th>30</th>
<th>60</th>
<th>90</th>
<th>180</th>
<th>270</th>
<th>360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>696</td>
<td>628</td>
<td>606</td>
<td>585</td>
<td>543</td>
<td>510</td>
<td>383</td>
</tr>
<tr>
<td>Group 2</td>
<td>706</td>
<td>636</td>
<td>600</td>
<td>579</td>
<td>543</td>
<td>509</td>
<td>409</td>
</tr>
<tr>
<td>Group 3</td>
<td>697</td>
<td>593</td>
<td>555</td>
<td>521</td>
<td>461</td>
<td>426</td>
<td>329</td>
</tr>
</tbody>
</table>
Major Adverse Cardiac Events

B  Secondary Efficacy End Point

Hazard ratio for group 1 vs. group 3, 1.08 (95% CI, 0.69–1.68)  
P=0.75

Hazard ratio for group 2 vs. group 3, 0.93 (95% CI, 0.59–1.48)  
P=0.76

Cumulative Incidence of a Major Adverse Cardiovascular Event [%]

No. at Risk

<table>
<thead>
<tr>
<th>Group</th>
<th>At 30</th>
<th>At 60</th>
<th>At 90</th>
<th>At 180</th>
<th>360</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>694</td>
<td>648</td>
<td>633</td>
<td>621</td>
<td>590</td>
</tr>
<tr>
<td>Group 2</td>
<td>704</td>
<td>662</td>
<td>640</td>
<td>628</td>
<td>596</td>
</tr>
<tr>
<td>Group 3</td>
<td>695</td>
<td>635</td>
<td>607</td>
<td>579</td>
<td>543</td>
</tr>
</tbody>
</table>

Pearl

• In patients with AFIB who undergo PCI with stent placement, treatment that includes low-dose (15 mg) or very low-dose (2.5 mg BID) rivaroxaban is associated with a lower risk of clinically significant bleeding, and no difference in MACE or stent thrombosis, compared to standard triple therapy with warfarin + DAPT
Case 5: ICH

- 65 yo man admitted with a 1.5 cm left basal ganglia hemorrhagic stroke and right hemiparesis. Onset 120 minutes ago.
- **PMH**: HTN, T2DM, stable CAD s/p remote NSTEMI with DES 2007.
- **Meds**: Lisinopril, amlodipine, metformin, aspirin 81 mg
- Occasional ETOH, non-smoker, no illicit drugs
- SBP 200/90, HR 70, RR 20, afebrile
- GCS 12, NIHSS 10
- A neurosurgical consultant recommends keeping SBP <140 and a platelet transfusion to limit hematoma expansion. No surgical intervention is planned.
Your initial orders include?

A. Nicardipine infusion to keep SBP <140 + transfuse 1 unit pheresed platelets.
B. Nicardipine infusion to keep SBP <140; no platelet transfusion.
C. Nicardipine infusion to keep SBP <180 + transfuse 1 unit pheresed platelets.
D. Nicardipine infusion to keep SBP <180; no platelet transfusion.
Intensive Blood-Pressure Lowering in Patients with Acute Cerebral Hemorrhage

Adnan I. Qureshi, M.D., Yuko Y. Palesch, Ph.D., William G. Barsan, M.D., Daniel F. Hanley, M.D., Chung Y. Hsu, M.D., Renee L. Martin, Ph.D., Claudia S. Moy, Ph.D., Robert Silbergleit, M.D., Thorsten Steiner, M.D., Jose I. Suarez, M.D., Kazunori Toyoda, M.D., Ph.D., Yongjun Wang, M.D., Haruko Yamamoto, M.D., Ph.D., and Byung-Woo Yoon, M.D., Ph.D., for the ATACH-2 Trial Investigators and the Neurological Emergency Treatment Trials Network*

- N=1000 with ICH, GCS ≥5, at least 1 SBP ≥ 180, hematoma volume <60 cm³
- Randomized, multicenter (110), open-label
- Mean age 62, SBP 201, NIHSS 11, women 38%, Asian 56%
- Intensive BP control (target 110-139) versus standard (140-179) started within 4.5 hours of clinical onset
- Nicardipine 5-15 mg/h
- 1° outcomes: disability and death at 3 mo (mRS 4-6)
- 2° outcomes: QOL score at 3 mo, hematoma expansion at 24 h, decreased GCS, increased NIHSS

Figure 1. Mean Hourly Minimum Systolic Blood Pressure during the First 24 Hours after Randomization, According to Treatment Group. The dashed vertical line indicates 2 hours, and I bars 95% confidence intervals.
Figure 2. Distribution of Scores on the Modified Rankin Scale, According to Treatment Group.
Secondary Outcomes

• No differences in
  – Hematoma expansion at 24 hrs
  – Neurologic deterioration within 24 hrs
  – Treatment-related serious AE within 72 hrs
  – QOL scores
Randomized, multicenter (41 in Netherlands, UK, France), open-label
- N=190, non-traumatic, supratentorial, GCS ≥8
- Men ~60%, mean age 74, mean NIHSS ~12
- Aspirin, clopidrogrel, dipyridamol, or combination
- Platelet concentrate transfusion within 6 hours of Sx and 90 min of imaging
- 1° outcomes: mRS at 3 months
Figure 2: Distribution of mRS score at 3 months
mRS=modified Rankin Scale. OR=odds ratio.

<table>
<thead>
<tr>
<th></th>
<th>Platelet transfusion group (n=97)</th>
<th>Standard care group (n=93)</th>
<th>Odds ratio (95%CI)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alive at 3 months (survival)</td>
<td>66 (68%)</td>
<td>72 (77%)</td>
<td>0.62 (0.33–1.19)</td>
<td>0.15</td>
</tr>
<tr>
<td>mRS score 4–6 at 3 months</td>
<td>70 (72%)</td>
<td>52 (56%)</td>
<td>2.04 (1.12–3.74)</td>
<td>0.0195</td>
</tr>
<tr>
<td>mRS score 3–6 at 3 months</td>
<td>86 (89%)</td>
<td>76 (82%)</td>
<td>1.75 (0.77–3.97)</td>
<td>0.18</td>
</tr>
<tr>
<td>Median ICH growth at 24 h (mL)*</td>
<td>2.01 (0.32–9.34)</td>
<td>1.16 (0.03–4.42)</td>
<td>..</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Data are n (%) or median (IQR). mRS=modified Rankin Scale. ICH=intracerebral haemorrhage. *n=80 in platelet transfusion group and 73 in standard care group.

Table 2: Secondary outcomes in the intention-to-treat population
Trend to Serious Adverse Events with Platelets

<table>
<thead>
<tr>
<th>Intention-to-treat population</th>
<th>Platelet transfusion group (n=97)</th>
<th>Standard care group (n=93)</th>
<th>Odds ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any SAE</td>
<td>41 (42%)</td>
<td>27 (29%)</td>
<td>1.79 (0.98–3.27)</td>
</tr>
<tr>
<td>Any fatal SAE</td>
<td>24 (25%)</td>
<td>15 (16%)</td>
<td>1.71 (0.83–3.51)</td>
</tr>
<tr>
<td>SAE due to ICH</td>
<td>24 (25%)</td>
<td>13 (14%)</td>
<td>2.02 (0.96–4.27)</td>
</tr>
<tr>
<td>ICH enlargement</td>
<td>15 (15%)</td>
<td>13 (14%)</td>
<td>1.13 (0.50–2.52)</td>
</tr>
<tr>
<td>Brain oedema</td>
<td>5 (5%)</td>
<td>0</td>
<td>11.12 (0.61–204.97)</td>
</tr>
<tr>
<td>Brain herniation</td>
<td>2 (2%)</td>
<td>0</td>
<td>4.90 (0.23–103.33)</td>
</tr>
<tr>
<td>Intraventricular extension</td>
<td>6 (6%)</td>
<td>0</td>
<td>13.28 (0.74–239.24)</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>3 (3%)</td>
<td>2 (2%)</td>
<td>1.45 (0.24–8.89)</td>
</tr>
<tr>
<td>SAE due to thromboembolism</td>
<td>4 (4%)</td>
<td>1 (1%)</td>
<td>3.96 (0.43–36.08)</td>
</tr>
<tr>
<td>Ischaemic stroke</td>
<td>1 (1%)</td>
<td>0</td>
<td>2.91 (0.12–72.26)</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>1 (1%)</td>
<td>1 (1%)</td>
<td>0.96 (0.06–15.55)</td>
</tr>
<tr>
<td>Extremity embolism</td>
<td>2 (2%)</td>
<td>0</td>
<td>4.90 (0.23–103.34)</td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>1 (1%)</td>
<td>0</td>
<td>2.91 (0.12–72.26)</td>
</tr>
</tbody>
</table>
Pearls

• Intensive SBP lowering (<140) in ICH patients does not appear to provide incremental benefit over standard SBP lowering (140-179).

• Platelet transfusion increases the risk of death or dependence in patients who have spontaneous supratentorial ICH while on antiplatelet therapy.
Papers that changed my practice in 2016

1. Always consider pulmonary embolism in unanticoagulated adults admitted first episode of syncope
2. Dexamethasone 40 mg/d x 4 days should be the preferred treatment for new ITP in adults
3. Misdiagnosis of cellulitis is very common
4. Valsartan-sacubitril is more clinically effective and cost-effective than ACEI in chronic systolic heart failure
5. There are options for antithrombotic therapy for Afib patient who undergo PCI
6. Intensive blood pressure reduction and platelet transfusions are not more effective than standard care in patients with hemorrhagic stroke