ISC Hot Topics 2017
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Disclosures
Brooke Kearins – no potential or actual conflicts of interest related to this presentation
Lynn Hundley - Medtronic speakers bureau
Objectives

The learner will:
1. Understand research topics and best practices presented at the 2017 International Stroke Conference
2. Discuss the relevance of at least two new practices that may influence their own program/practice.

Systems of Care: 3 R’s

Right patient, right place, right amount of time
Rhode Island Hospital: Transfer Process

- Collaboration between services and neurology leaders in the area
  - Develop a process
  - Find a common language to identify ELVO (LAMS)
- 1 call transfer center
- Unique and progressive registration system, utilized for all entry points
- Extensive education provided for pre-hospital and PSCs
- Feedback loop for all transfers
Rhode Island Hospital: Transfer Process

- Screen on arrival
- Call CSC for + screen (LAMS 4-5)
- Mobilize transport prior to imaging
- CT & CTA on 1st trip to scanner
- Share CTA w/CSC via cloud based system (LifeIMAGE)
- Goal door in/door out (DiDo) less than 60 minutes

Rhode Island Hospital: Results

- Included 70 patients
- Onset to reperfusion times:
  - Full execution of process = 184 minutes
  - Partial execution of process = 232 minutes
- Comparison
  - SWIFT PRIME = 307.5
  - HERMES = 345
- Decreased DiDo at all centers
  - Fastest less than 60 minutes
- Decreased DTN at all centers
  - Best 65 to 39.5 minutes
  - Onset to puncture of 111 minutes
- Clinical outcomes improved for all endpoints
  - NIHSS at DC p = .0002
  - mRS 0-2 90 days p = .0387
Expanded Roles for APRNs in Stroke Care

• Stroke teams
  • APRNs staffing the mobile stroke unit in Memphis (NETSMART trained)
    • Study done at UT Memphis showed safety of APRNs on this team
  • Telemedicine
    • Taking initial calls for telemedicine and in some cases directing treatment

• Clinics
  • Bridge clinics
  • Transitions of care programs
Early Statins
Shinichi Yoshimura, MD, PhD, from the Hyogo College of Medicine, Nishinomiya City, Japan.

Early Statin Study
• Statins within 24 hours versus 7 days
  • No improvement in neurologic function
  • 270 patients enrolled at 13 institutions in Japan. Median NIHSS 3
  • Included if dyslipidemia or LDL >100 and hospitalized within 24 hours of AIS
    • 131 statin within 24 hours
    • 126 delayed statin-day 7
    • atorvastatin 20, pitavastatin 4, rouvastatin 5
  • Primary endpoint 90 day mRS-not statistically significant
  • Secondary endpoint-median change in NIHSS-similar in both
  • Mean change in LDL at day 21-greater in early group (-65 vs -51)
Early Statin Study

- No difference in other secondary endpoints (non traumatic cerebral or SAH or large-vessel or peripheral artery disease requiring treatment)
- Rates of new ischemic stroke 6.9% in early vs 4% in delayed (NS)
- Safety endpoints-no significant difference
- Limitations: stroke severity (prior study THRaST used median NIHSS 12), small study
- Reduction in LDL is important
- Reminder: SAMMPRIS trial-aggressive medical management superior

HeadPoST -Head Position in Acute Stroke

Trial-Lead investigator Craig S. Anderson, M.D., Ph.D.
HeadPoST Study

• Head flat versus 30 degrees first 24 hours after admission-AIS and ICH
• 11,094 patients from 114 hospitals in 9 countries
• Median NIHSS 4
• Largest randomized nursing care trial ever
• Primary endpoint-functional outcome at 90 days:
  • No significant risk with either position
  • No benefit from either position
  • No effect on recovery, patient’s well being or mortality

HeadPoST Study

• Previous studies-lying flat improved recovery-increased blood flow and oxygen to brain
  • 30 degree-decrease risk of PNA and decreased pressure in brain
• Limitations: mild to moderate strokes
• Complaints about lying flat-not tolerable
Cryptogenic Stroke Session

Debbie Summers, St. Luke’s, Kansas
Mary Amatangelo, Brigham & Women’s, Boston
Pat Lane, Bon Secours, Virginia

Cryptogenic Stroke

Cryptogenic Stroke Session

• 5th Leading cause of death; #1 leading cause of disability
• 800,000/year; expected to increase by 20.5% by 2030
• 1/3 of those 800,000 are cryptogenic (CS)
• Epidemiology depends on age
  • 15-45 dissection most common; >60 AF most common
• Potential less common causes of stroke
  • AF, PFO, inherited thrombophilia, aortic arch plaques
  • Can be overlooked; incomplete work up; leading to cryptogenic label and no or inappropriate secondary prevention
• Work up should start basic and be thorough enough to find cause; could likely extend beyond hospital stay
  • Requires collaboration across the entire continuum so nothing is missed

Cryptogenic Stroke Session

• No technical guidelines for complete work up; expert opinion
• Minimal work up: H&P, CT or MRI; Vessel imaging; Cardiac structure (TTE); Cardiac rhythm; Basic labs: lyes, glucose, CBC, PT, INR, aPTT, Cardiac markers (from 2013 guideline)
• Work up should progress until cause is identified
  • Prolonged cardiac monitoring, Hematologic testing for arterial/venous hypercoagulability
  • Genetic testing, autoimmune evaluation, advanced cardiac structure imaging, prolonged cardiac rhythm monitoring (1-3 years), work up for occult cancer
• Timing for extended monitoring
  • 30 day versus ILR
  • Crystal AF study – mean detection for AF was 81 days
• AF increase stroke risk 5Xs; AF stroke victims 2Xs more likely to die; can reduce risk by 67% if treated with anticoagulation!!
Recent Study: Disturbing...

- Ying Xian, Duke University, PCORI study
- 1622 hospitals in GWTG from 2012-2015
- 94,474 patients included with AIS and known AF
- 83.6% or 79,008 under or unprotected!!
- Predicted 58,000-88,000 strokes might be prevented with guideline based treatment

- Just because we know something...doesn’t’ mean it happens....
- If we don’t look long enough to find something, how can we start adequate secondary prevention?
Cryptogenic Stroke Session

- 3 barriers exist to appropriate work up and treatment:
  - Patient related
  - Treatment related
  - Practitioner related
- Failure to carry out adequate follow up or discharge plans
  - Post acute collaboration is a must
- Consider creating cryptogenic stroke algorithm for non-stroke-ologists

- Bottom line...exhaustive investigation to guide secondary prevention, if there is a cause FIND IT AND TREAT IT!!
- What about PFO’s...current guidelines do not recommend closure...

Randomized Evaluation of Recurrent Stroke
Comparing PFO Closure to Established Current
Standard of Care Treatment (RESPECT) study

David Thaler, MD, Tufts University School of Medicine,
Boston, Massachusetts
RESPECT Study

- Amplatzer PFO Occluder superior to medical management for prevention of recurrent AIS for cryptogenic stroke
  - 481 medical treatment (28 stroke related events), 499 implanted (18 stroke related events)
  - Ages 18-60- experienced cryptogenic stroke within past 9 months
  - 69 sites in US and Canada from 2003-2011
  - Device approved by FDA October 2016
  - Composite endpoint- occurrence of non-fatal and fatal ischemic stroke or death w/in 45 days.
  - Definition of stroke- neurological deficit due to cerebral ischemia on imaging scans or symptoms > 24 hours
  - Limitation: Best medical management varied

Antiplatelet Therapy

Homman Kamel, MD
Cornell University
Antiplatelet Therapy

- Chinese acute stroke trial (CAST) 1996
  - Aspirin vs placebo – 0.5% absolute risk reduction (ARR) over each 4 weeks
  - For every 200 patients given 81mg aspirin = 1 stroke prevented in just the 1st 4 weeks
- International stroke trial (IST) 1997
  - Aspirin vs placebo – 1.1% ARR over 2 weeks
- Meta-analysis 2014
  - Number needed to treat (NNT) = 140 to avoid 1 recurrence
  - Number needed to treat to cause harm (NNTH) = 554 to cause 1 ICH

Antiplatelet Therapy

Head-to-head comparisons with Aspirin

- Aggrenox –
  - ESPS-2 3.0% ARR over 2 years/ESPIRIT no significant ARR over 3 years
  - No data superior to aspirin
  - Causes headaches = issues with compliance
- Clopidogrel –
  - CAPRIE – no significant difference in ARR over 2 years
  - PROFESS – No significant difference

Which one to use??

- Consider cost/availability
- Choose the 1 the patient will actually take!
Antiplatelet Therapy

Short term dual antiplatelet therapy (DAPT)

- FASTER (2007) – 3.7% ARR over 90 days (stopped early/low power)
- CHANCE (2012) – 3.5% ARR over 90 days
- Meta-analysis (2013) – 1.7% ARR over 90 days
- POINT – ongoing study
- Some suggestive data/not conclusive
- 90 day utilization – need to ensure it is stopped

Long term DAPT

- No significant difference in prevention - ↑ ICH = not recommended

Association of Antithrombotic Drug Use with Subdural Hematoma

Gaist, Garcia, et al. (2017) JAMA; 317 (8) 836-846

- Denmark
- 10,010 patients from 20-89 compared w/400,380 matched individuals from general population
- DC diagnosis of 1st ever SDH from 2000-2015
- Use of low dose aspirin, clopidogrel, VKA, direct oral anticoagulant and combined antithrombotic drug treatment
- Risk of spontaneous SDH was highest with concomitant use of low dose aspirin + VKA
- 3.6% of cases vs. 1.1% of controls
What questions do you have?

https://clipartfest.com/download/e29e4b7e015baccb7ed532c2a66d6a71488a1dcb.html