Strategies to Reduce Heart Failure Readmissions

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Objectives

- Understand Heart Failure Burden
- Highlight Get With the Guidelines Metrics
- Explain Transitional Care Management model in specialty clinic
- Describe how technology – CardioMEMS™ HF System – can take prevention to a new level
Disclosures

- St. Jude Medical Consultant
Heart Failure Burden

Heart Failure by the Numbers

Over half of the heart failure costs are spent on hospitalization.

5.1 million people in the U.S. suffer from heart failure.

100,000 - Over 1 million heart failure admissions each year.

By 2030, every U.S. taxpayer could pay $244 each year for heart failure expenses.

Even with daily self-monitoring:

- 25% of heart failure patients are rehospitalized within 30 days.
- 50% of heart failure patients are rehospitalized within 6 months.

Estimated U.S. heart failure cost:

- $31 billion in 2009
- $70 billion in 2030
Get With The Guidelines – Heart Failure (GWTG-HF)

- In-hospital program for improving care by promoting consistent adherence to the latest scientific treatment guidelines
GWTG-HF

- 3 key patient centered care domains
  - Evidence based medications
  - Early follow-up and care coordination
  - Provisions of at least 60 minutes of heart failure education by qualified heart failure educator
GWTG-HF Measures

- 4 Achievement Measures that must be met at 85%
  - ACEI/ARB at Discharge
  - Evidence Based Beta Blockers at Discharge
  - LV function documented
  - Post DC Appointment
GWTG-HF

- 9 Quality Measures of which 4 must be met at 75%
  - Aldosterone Antagonist at Discharge
  - Anticoagulation for Atrial Fibrillation or Atrial Flutter
  - Hydralazine and Nitrate at Discharge
  - DVT Prophylaxis
  - CRT-D/CRT-P Placed or Prescribed at Discharge
  - ICD Counseling or ICD Placed or Prescribed at Discharge
  - Influenza Vaccine during Flu Season
  - Pneumococcal Vaccine
  - Follow Up Visit within 7 Days or less
GWTG-HF Achievement Results (7/2015-6/2016)

ACEI/ARB: 98.3%
Beta Blockers: 93.2%
Measure LV: 99.9%
DC Appt: 86.8%
GWTG-HF Achievement Results (7/2015-6/2016)

- ACEI/ARB: 98.3%
- EB Beta Blockers: 93.2%
- LVEF documented: 99.9%
- Post DC Appointment: 86.8%
  - DC Instructions: 97.9%

Source: GWTG Heart Failure Registry/Quintiles Data source
GWTG-HF Quality Results (7/2015-6/2016)

Rate Measures

Percent of Patients

- Aldosterone: 77.5%
- Anticoag/AF: 95.2%
- DVT: 99.7%
- CRT Counsel: 73.2%
- ICD Counsel: 94.2%
- Influenza: 92.3%
- Pneumovax: 95.4%
- Follow-up visit: 72.4%

Time Period: 6/7
GWTG-HF Quality Results (7/2015-6/2016)

- Aldosterone Antagonist: 77.5%
- Anticoagulation AF: 95.2%
- Hydralazine/Nitrate: 40.2%
- DVT Prophylaxis: 99.7%
- CRT-D/CRT-P: 73.2%
- ICD: 94.2%
- Influenza Vaccine: 92.3%
- Pneumococcal Vaccine: 95.4%
- Follow Up Visit within 7 Days: 72.4%

Source: GWTG-Heart Failure Registry/Quintiles Data source
Transitional Care Management (TCM)

- Services provided to a patient whose medical and/or psychosocial problems require moderate or high-complexity medical decision making during transitions in care from an inpatient hospital setting.

- Patients are identified by presenting to an Aurora hospital with Heart Failure and had one of our Cardiologists listed as their Attending Practitioner.
TCM Qualifications

- Phone Call Contact with 2 business days of discharge
- Face to face visit with in 7-14 days from discharge
TCM Recent Data

- Readmission Rate: **14%**
  - Down 4% from 6 months ago

- Prior to TCM, **only 45%** of patients would follow up with specialty or PCP
  - **Now 75%** of patients follow up with a monthly high to 95%
TCM Take-Aways

- Reduction in Readmission rate
- Increase in revenue due to TCM billing/coding
CardioMEMS™ HF Monitoring System

Catheter Delivery System

Patient Home Electronics Unit

Web-based Pressure Database

Physician Access Via Secure Website
CardioMEMS™ HF System
What Makes a CardioMEMS ™ Candidate

- NYHA Class 3
- At least 1 hospitalization in the last 12 months
- On optimal evidence based medical and device therapy
- Anatomical Criteria - PA branch diameter ≥ 7 mm
Relative Contraindications

- BMI > 35kg/m²
  - Measure Chest Circumference
  - okay if less than 65 inches (165cm)

- History of poor medical or clinical compliance
Absolute Contraindications

- History of acute myocardial infarction or stroke within past 2 months
- History of recurrent (>1) DVTs or pulmonary embolus
- History of Chronic Kidney disease (Stage IV or V), GFR < 25 ml/min.m²
- Implantation of CRT-D or CRT-P within past 3 months
- History of Congenital Heart Disease
- Mechanical right-sided heart valve replacement
- History of diagnosed coagulation disorder or unable to tolerate anti-platelet therapy (aspirin or clopidogrel)
Patients with moderate NYHA class III HF for at least 3 months, irrespective of LVEF and a HF hospitalization within the past 12 months were included in the study.

550 Pts w/CMEMS Implants
All Pts Take Daily readings

Treatment
270 Pts
Management Based on PA Pressure + Traditional Info

Control
280 Pts
Management Based on Traditional Info

Primary Endpoint: Rate of HF Hospitalization

Secondary Endpoints:
- Change in PA Pressure at 6 months
- No. of patients admitted to hospital for HF
- Days alive outside of hospital
- QOL

26 (9.6%) Exiled <6 Months
15 (5.6%) Death
11 (4.0%) Other

26 (9.6%) Exiled <6 Months
20 (7.1%) Death
6 (2.2%) Other

CHAMPION Clinic Trial Results

Patients managed with PA pressure data had significantly fewer HF hospitalizations as compared to the control group.

Case Study #1

- 82 year old

- Ischemic Cardiomyopathy (15%), s/p ICD 2012

- Hospitalizations
  - 3 admissions June, July & August 2015 all for decompensated HF

- PA pressures sensor implanted 11/2015
Case Study #1

Inc Lasix 60 bid
Inc Losartan 50 qd
Dec Lasix 40 bid
Inc Lasix 80 bid x 2 days
Resume Lasix 60 bid
Inc Lasix 80 bid x 3 days
Resume Lasix 60 bid
Start Spironolactone 12.5 qd
Case Study #1 Take Aways

- No hospitalizations since implant
  - 11 months
  - 1 year 3 months since last hospitalization

- Able to optimize medical therapy
  - Increase losartan and started spironolactone
Case Study #2

- 55 year old

- Nonischemic Cardiomyopathy (22%), s/p CRT-D upgrade 2014, NSVT with 2 prior syncopal episodes

- Hospitalizations: 10/2014 for chest pain and fluid overload

- PA pressures sensor implanted 5/2015
Case Study #2
Case Study #2

Inc Torsemide 80 qd

Fluid intake 3-4 L/day Dec to 2L/day

Extra Torsemide 40 mg x1 day

Extra Torsemide 40 mg x1 Mexican yesterday
Case Study #2

Extra Torsemide 40 x 1 day

Extra Torsemide 40 x 1 day
Olive Garden

Extra Torsemide 40 x 2 days
Case Study #2 Takeaways

- No hospitalizations since implant
  - 1 year 5 months
  - 2 years since last hospitalization

- Able to identify periods of non compliance remotely
  - Allows for same day or next day medication adjustments to prevent decompensation
  - More Proactive approach to medical management
Overall Benefits for PA Pressure Monitoring

- Real time feedback of PA pressures/fluid status
- Same day adjustments
- Provides opportunity for education
- Proactive approach in preventing decompensation
CardioMEMS™ Success

6/2016 Patient Outcomes (n=27)

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- 37% reduction in ED Visits
- 24% reduction in All-Cause Inpatient Admissions
- 60% reduction in HF inpatient admissions vs pre-implant *
- 30-day Inpatient Readmission Rate: 3.85% (Only 1 out of 27 was admitted within 30 days of discharge)

* Statistically significant
Take-Aways

- Basic Heart Failure Education works

- Closer follow up is the first step

- Utilization of technology can further help with compliance and a more proactive approach to Heart Failure Management