

Glycemic Protocol for Cardiovascular Surgery Piedmont Hospital

February 1-18, 2006

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Piedmont CVS Glycemic Protocol

February 18, 2006

- Total number cases: 47
 - BG >140 mg/dl 100%
- Diabetes prior to surgery 26%
 - On insulin 14%
- Pre-op A1c
 - >7% 19%
 - >6% 35%
 - <6% 65%



Glucommander Experience

- Initial Multiplier

- (BG – 60) / Multiplier

- Time to stable BG <110 mg/dl and multiplier

- 0.02 10.4 hours 0.09

- 0.04 8.7 hours 0.12

- 0.06 5.9 hours 0.08

- Total Time on Glucommander

- 45 hours



Glucommander Experience

Hypoglycemia

- **BG <60 mg/dl**
- **2 cases out of 47 runs averaging 45 hours**
 - **Occurred at 32 and 25 hours**
- **Immediately treated with D50**
 - **(100 – BG) x 0.4 ml**
- **Both without pre-surgery diagnosis of diabetes**
- **Both treated with Solumedrol upon by-pass**



Glucommander Experience

- Average total time on Glucommander
 - 45 hours
- Post Glucommander sc insulin
 - 79%
- Home on insulin
 - 43%
 - Versus 14% on admission



Piedmont CVS Glycemic Protocol

February 18, 2006

- **Weekly planning meetings**
 - **Sept 2005 to Feb 2006**
 - **Surgeons, endocrinologist, ICU nurses, med-surg nurses, diabetes educators, dieticians, pharmacists, IT personnel, administration**
- **100% CVS patients had BG >140 mg/dl**
- **Up to 20 Glucommanders in use**
- **Need to add assistants for BG monitoring**



Piedmont CVS Glycemic Protocol

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- **Observation on February 18, 2006**
- **All by-pass patients given 250 mg IV Solumedrol**
 - **Not used in persons known to have diabetes**
- **Evidence that it reduces complement activation and levels of proinflammatory cytokines**
- **Steroids can be replaced with aprotinin (trasylo[®])**
- **Expect to cut need for Glucomander use by 50%**
- **Significant economic savings without deterioration in glycemic control**

