



Early Pulmonary Edema and Atrial Fibrillation Detection Using Implantable Devices

Technology No. z05107

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Chronic Heart Disease Management

With an aging population, cost-effective management of chronic heart disease is a high priority. In particular, pacemaker and defibrillator companies are increasingly interested in adding sensors and monitors to implantable devices to monitor for signs of cardiac problems. With early warning, the cardiac patient can seek medical attention prior to a life threatening event, resulting in increased survival and reduced health care costs.

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Early Pulmonary Edema and Atrial Fibrillation Detection

Inter-atrial block is a condition in which activation of the left atrium lags significantly behind the activation of the right atrium. Pulmonary edema creates pressure that can cause the left atrium to activate late in the cardiac cycle. Continuous monitoring of inter-atrial block using

standard implantable leads on current pacemakers or defibrillators could be used for early pulmonary edema or atrial fibrillation detection. This method only requires slight changes to current pacemaker or defibrillator software and hardware.

BENEFITS OF MONITORING INTER-ATRIAL BLOCK AND PULMONARY EDEMA

- Continuous monitoring ensures early warning of impending cardiac problems.
- Monitoring both left and right atria increases sensitivity for early diagnosis of inter-atrial block, atrial fibrillation, pulmonary edema and heart disease.
- Design requires minimal hardware and software changes to current implantable devices, saving cost in regulatory approval and manufacturing.
- Flexible sizing for implantation as a pacemaker or a defibrillator allows incorporating across product lines.
- Early detection of atrial fibrillation and pulmonary allows the patient to seek medical attention prior to a life threatening event.

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