

- [54] NONINVASIVE CONTINUOUS MEAN ARTERIAL BLOOD PRESSURE MONITOR
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[57] **ABSTRACT**

An apparatus and a method use noninvasive electrical bioimpedance measurements to monitor the mean arterial blood pressure of a patient on a continuous (heart-beat-by-heartbeat) basis. The apparatus and method process the electrical impedance across two segments of body tissue to provide a signal for each segment that indicates the increase in blood flow in each segment at the beginning of each cardiac cycle. The apparatus and method process the signals corresponding to each segment to measure the arterial pulse propagation delay between the two segments. The arterial pulse propagation delay is inversely related to the mean arterial blood pressure of the patient. The apparatus and method use the measured arterial pulse propagation delay to calculate the mean arterial blood pressure of the patient. The cardiac output of the patient is also advantageously measured and the cardiac index of the patient calculated from the cardiac output. The cardiac index and the mean arterial blood pressure are then used by the apparatus and method to calculate the left cardiac work index and the systemic vascular resistance index of the patient.

27 Claims, 2 Drawing Sheets

