Design and Implementation of Pressure Measurement System for Pressure Garment

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ABSTRACT

“ Burns ” are considered as a serious trauma in medical treatment. The main effects of the burning patients are hypertrophic scars and contracture of the joints. The therapy of pressure is deemed a safe and effective method for burn injuries, however, the medical efficacy can only be reached in the condition of pressure at least 25mmHg. The purpose of this study is focusing on designing a pressure measurable system for the pressure garment that is widely used for the treatment of burn. With the aim of providing quantitative clinical data, this system collects and analyses the performances of pressure garment, which get from different human body parts. The pressure measurable system divides into three parts: (1) pressure measurement component, (2) microprocessor system, and (3) signal output. To evaluate the applicable information that acquire from the actual clinical practice by using this system has compared with the pressure measurement system produced by AMI Company. The results reveal a minute performing difference between these two systems. It also proves the pressure measurable system that is used in this study is appropriate for measuring the interface pressure between the pressure garment and the skin. The clinical experiment will discuss and analyze of upper and lower limbs that are the parts in human ’ s body frequency to get burned. From the clinical experiment, the surface curvature of skin for human is irregularly distributed. However, the foam or silicon can be employed to create the pressure more even and proper for a large variation in surface curvature of human body. In this study, the pressure measurable system not only can be applied to measuring pressure of the pressure garment for the burning viipatients, it but also can be used in the elastic compression stockings for the varicose veins of the lower limbs, the tunics for postnatal uterus ’ contraction and post-surgery restrained hematoma.

Keywords : Burns, Pressure Garment, Pressure Measurement System

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