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**Algorithmic Model for Risk Assessment of Heart Failure Patients****By:** Bohacik, J (Bohacik, Jan)<sup>[1]</sup>; Matiasko, K (Matiasko, Karol)<sup>[1]</sup>; Benedikovic, M (Benedikovic, Miroslav)<sup>[1]</sup>; Nedeljakova, I (Nedeljakova, Iveta)<sup>[1]</sup>**Book Group Author(s):** IEEE**2015 IEEE 8TH INTERNATIONAL CONFERENCE ON INTELLIGENT DATA ACQUISITION AND ADVANCED COMPUTING SYSTEMS: TECHNOLOGY AND APPLICATIONS (IDAACS), VOLS 1-2****Book Series:** IEEE International Workshop on Intelligent Data Acquisition and Advanced Computing Systems-Technology and Applications-IDAACS**Pages:** 177-181**Published:** 2015**Document Type:** Proceedings Paper**Conference****Conference:** IEEE 8th International Conference on Intelligent Data Acquisition and Advanced Computing System-Technology and Applications (IDAACS)**Location:** Warsaw Univ Technol, Warsaw, POLAND**Date:** SEP 24-26, 2015**Sponsor(s):** IEEE Ukraine Sect I & M - CI Joint Societies Chapter; Res Inst Intelligent Comp Syst; Ternopil Natl Econom Univ; V M Glushkov Insti Cybernet; Natl Acad Sci Ukrain; Warsaw Univ Technol, Fac Elect Informat Technol; Warsaw Univ Technol, Fac Math Informat Sci; Univ Maine; River Publishers; Svantek; IEEE Ukraine Sect**Abstract**

A leading cause of hospital admission in the elderly is heart failure and it is considered a major financial burden since the hospitalization costs are high. This is intensified with a lack of medical professionals due to a continuing significant increase of patients with heart failure as a result of obesity, diabetes and aging population. Integration of an intelligent decision support system into a home telemonitoring system seems a more-and-more supported solution. Therefore, the use of ambiguity for risk assessment of patients with heart failure is investigated. An algorithmic model is made using ambiguity and notions of fuzzy logic. The algorithmic model stores knowledge about patients as a group of interpretable fuzzy rules and uses them for risk assessment. The study shows that its achieved results are promising in comparison to a Bayesian network classifier, a nearest neighbor classifier, multilayer neural network, 1R classifier, a decision list, and a logistic regression model.

**Keywords****Author Keywords:** algorithmic modeling; fuzzy rules; fuzzification; risk assessment; heart failure**Author Information****Reprint Address:** Bohacik, J (reprint author)

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