



肝疾患のMT法における識別精度向上 に関する研究

—割引係数法の利用—

*Improving the Accuracy of Discrimination of Liver Diseases
—A Study of the Use of the Discount Coefficient (β Coefficient) —*

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Improving the reliability of a physician's diagnosis also has a major impact on the patient. Studies related to liver diseases have been carried out since the early days of the Mahalanobis-Taguchi (MT) system, and in the MT methods that use inverse matrices, even when the true value is unknown, diagnostic decisions have been made with a standardized Mahalanobis distance scale by use of explanatory variables. When the true value is unknown, however, it is not easy to determine and study the discriminatory capability of the obtained distances or the suitability of their sensitivity. In the present study the correlation coefficients of the unit space were corrected by use of a discount coefficient method. The correction is shown to increase the distance values of the data and improve the S/N ratio of the discriminations. In the cases studied here, as compared with the conventional method, the detection sensitivity of the Mahalanobis distance for liver patients was improved by approximately a factor of two.

Key words : Mahalanobis distance, discount coefficient, β coefficient, liver disease, Mahalanobis-Taguchi system, Taguchi methods, quality engineering, S/N ratio

1. はじめに

MTシステムは逆行列を用いる方法として、1970年代に田口、兼高らにより肝疾患患者に対して適用されたのが嚆矢である¹⁾。その後、余因子行列を用いる方法、シュミットの直交化を用いる方法などを

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