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Construction of a factorial model for medication adherence in patients with chronic diseases receiving home care services

（社会人大学院博士課程 4 年医療の質・安全管理学）
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【Aim】 This study aimed to construct a factorial model for medication adherence in order to examine the support for taking medications in patients with chronic diseases receiving home care services.

【Method】 The participants were 460 of the outpatients having chronic diseases. A self-administered questionnaire survey, which consisted of 74 items based on a composition concept of medication adherence factors, “Details of treatment/prescription”, “Attributes/Individual characteristics”, “Habits of daily life”, “Potential of continuously taking medication”, was conducted among the outpatients. And the items on the medication adherence scale were also gathered. Analysis methods were multivariate analysis and structural equation modeling（SEM）.

【Result】 A total of 436 valid responses were obtained. The results of analysis showed that the following items were mutually associated and had influences on “Medication adherence” and “Potential of continuously taking medication”: “Presence or absence of taking medication fo ≥ 10 years”; “Presence or absence of one-dose package”; “Ability of hearing of a talk with a person”; and “Eating regularly.” In addition, “Potential of continuously taking medication” was found to influence “Medication adherence.” The fit of the model was as follows: χ^2=6.497, df=7, p=0.483, resting metabolic rate (RMR)=0.230, goodness of fit index (GFI)=0.994, adjusted goodness of fit index（AGFI）=0.982 comparative fit index（CFI）=1.000 root mean square error of approximation（RMSEA）=0.000 Akaike information criterion（AIC）=34.497 and rescaled Akaike’s information criterion（CAIC）= 102.980.

【Conclusion】 The study was able to construct a factorial model for medication adherence. It was shown that support for taking medication might be available for enhancing the “Potential of continuously taking medication.”

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Prediction of Organ Injury by Measuring Venous Lactic Acid Levels of Patients Presenting to the Secondary Emergency Department

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【Background and Objectives】 In intensive care, arterial lactic acid values reflect the severity of shock, and are hence considered useful for predicting organ damage[1)2)]. However, in the secondary emergency department, more noninvasive methods of venous blood sampling is often performed. Therefore, we examined whether organ damage could be predicted from venous blood lactic acid values.

【Methods】 We evaluated venous blood lactic acid values, and presence/absense of sepsis and other diseases, in 170 consecutive patients who underwent venous blood gas analysis at the secondary emergency department of single facility for 3months. Sepsis was diagnosed according to the definition of Sepsis-3.

【Results】 Venous blood lactic acid values were higher in the sepsis group than in the non-sepsis group, which did not contradict previous findings（p=0.013）. Although patients with epilepsy, acute alcohol intoxication, and hyperventilation tended to have higher in lactic acid values than the sepsis group, the difference were not statistically significant（P values: 0.80, 0.65, and 0.78, respectively）.

【Conclusions】 In patients with epilepsy, acute alcohol intoxication, and hyperventilation, the increased consumption of glucose in cells, decreased lactic acid metabolism owing to hepatic dysfunction from acute alcohol poisoning, and, a reduction in oxygen supply, respectively, were thought to be the causes of the increased lactic acid levels. However, organ dysfunc-

tion was not observed in these patients[3)4)5)]. The above results de, there are demonstrate that patients who visit the secondary emergency department have a variety of diseases, and venous blood gas analysis that can obtain much information promptly. Venous blood lactic acid values are useful to distinguish patients with and without sepsis presenting to in the secondary emergency department. However, caution is required as venous blood lactic acid values are also increased in patients with epilepsy, acute alcohol intoxication, and hyperventilation.

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Staphylococcus aureus Bacteremia due to Central Venous Catheter Infection : A Clinical Comparison of Infections Caused by Methicillin-Resistant and Methicillin-Susceptible Strains

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【Background】 Bacteremia due to Staphylococcus aureus has been associated with mortality rates of 15-60%. Central venous catheter（CVC）infection is a major cause of healthcare associated MRSA bacteremia. We investigated the differences in clinical features and mortality rates for patients who have methicillin-resistant S. aureus（MRSA）bacteremia compared with methicillin-susceptible S.aureus（MSSA）bacteremia secondary to CVC infection.

【Methods】 We retrospectively investigated all the patients who showed positive for MRSA or MSSA from peripheral blood cultures and also positive from semiquantitative cultures of CVC tip taken on the same or near date from Aug 2004 to Mar 2016 at St Luke's International Hospital. We included the patients who were aged over 15, with sufficient medical records and did't have other primary infections. We analyzed the consecutive 36 S.aureus bacteremia due to CVC infection. We compared the characteristics, therapy, complications and 60 day mortality rate of the MRSA and MSSA. Mann-Whitney *U*-test, chi-square test, Fisher test were used for analysis.

【Results】 There were 17 MRSA patients（47%）and 19 MSSA patients（53%）. Median age 72（SD27）in MRSA patients, 55（33）in MSSA patients, $P<0.01$. Underlying diseases of the MRSA patients vs the MSSA patients : MRSA carrier 10（59%）vs 3（16%）, $P=0.01$. Diabetes 3（18%）vs 5（26%）, $P=0.70$. Malignancy 2（12%）vs 5（26%）, $P=0.41$. Renal diseases 4（24%）vs 7（37%）, $P=0.48$. Steroid use 8（48%）vs 4（22%）, $P=0.16$. TPN 10（60%）vs 4（22%）, $P=0.16$. Complications of the MRSA patients vs the MSSA patients : Septic shock 8（48%）vs 3（16%）, $P=0.07$. Endocarditis 0（0%）vs 2（11%）, $P=0.49$. Duration of catheter placement : MRSA patients 13.5 days（8）vs MSSA patients 9.5 days（20）, $P=0.58$. Time lag from onset to CVC removal : MRSA patients <1 day vs MSSA patients 1.0 day, $P=0.71$. Time lag from onset to start effective antibiotics（In all MRSA patients, vancomycin was started.）: MRSA patients <1 day vs MSSA patients <1day, $P=0.7$. 60day mortality rate : MRSA patients 6/17（35%）vs MSSA patients 1/19（5.3%）, $P=0.04$.

【Conclusions】 Patients with MRSA carrier and old age might have higher risk of MRSA CVC infection. MRSA patients might have higher risk of septic shock（48%）and showed significantly higher 60 day mortality rate（35%）compared with MSSA patients（5.3%）in spite of appropriate therapy.

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保存加療に奏功した重症肝損傷 IIIb の一例

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症例は 55 歳男性。既往は特になし。第 1 病日の正午、公園で樹木の伐採中に樹木が倒れ胸部を受傷し救急要請。来院時の vital は GCS E4V5M6、HR 85、BP 116/84、SpO2 96%（room air）、RR 25、BT 35.8 であり、造影 CT にて右肝実質内に数か所の extravasation を認め、肝周囲、脾周囲、Douglas 窩