

人類生態班 A

ソンコン郡在住高齢者における加齢、疾患と生態に関する研究-II

松林公蔵 (京都大学東南アジア研究所)

奥宮清人 (総合地球環境学研究所)

石根昌幸 (京都大学医学部大学院)

鈴木健太郎 (京都大学医学部大学院)

酒井茂樹 (滋賀医科大学医学部)

石森綾子 (東京女子医科大学医学部)

白田加代子 (東京女子医科大学医学部)

キーワード：老年者、加齢、疾患、生態、ソンコン郡

調査期間・場所：2004年12月7日～26日

ラオス、サワンナケット県、ソンコン郡、パクソン&ラハナム地域

Aging, Diseases and Ecology in Community-Dwelling people living in Songkohn District-II

Kozo MATSUBAYASHI (The Center for Southeast Asian Studies, Kyoto University)

Kiyohito OKUMIYA (Research Institute for Humanity and Nature)

Masayuki ISHINE (Graduate School of Medicine, Kyoto University)

Kentaro SUZUKI (Graduate School of Medicine, Kyoto University)

Shigeki SAKAI (Faculty of Medicine, Shiga University of Medical Science)

Ayako ISHIMORI (Faculty of Medicine, Tokyo Women' s Medical University)

Kayo USUDA (Faculty of Medicine, Tokyo Women' s Medical University)

Key word: Aging, Diseases, Ecology, Songkohn District

Research Period and Sites : 2004, Dec.7-26

Pakson & Lahanam Zone, Savannakhet province, Laos PDR

要旨：2004年2月の一次調査で、ラハナム村在住高齢者の包括的機能評価を含む医学調査を行い、高血糖や貧血を有する高齢者の頻度が高いことを報告した。今回の調査では、ソンコン郡の中心部のパクソン住民に対し、同様の調査を行い、疾患、生活機能と環境の違いについて、ラハナム住民と比較分析を行うとともに、ラハナムとパクソンの高血糖に対し、経口ブドウ糖負荷テストによる、糖尿病の正確な疫学調査を施行し、インスリン分泌能と反応性の分析や経済調査との関連から、発症原因について考察した。糖尿病その他の疾患に関する、住民と現地医療従事者への情報提供を実施した。高血糖の有無による、合併症の発症や死亡に対する予後を今後追跡していく必要がある。

INTRODUCTION

This medico-ecological research intends to clarify the medical and geriatric actual conditions of community-dwelling people in the villages in Laos and may contribute to future strategy to promote the health of the elderly in Lao communities as well as in Japanese ones.

In February in 2004, we examined 295 elderly people (M:F=119:186, mean age: 69years old) living in 6

villages (Lahanam Thong, Bngkhamlai, Thakhamlian, Dong Bang, Lahanam Tha, Kokphak) in Songkhon district in Savannaket Province.in Lao PDR. Compared with Japanese elderly, each score in basic ADL, instrumental ADL, intellectual activity and social role was lower in Lao PDR than in Japan. Prevalence of depression was higher and QOLs were lower in Lao elderly subjects than in Japanese ones. Body mass index, prevalence of hypertension, and mean total and HDL cholesterol level were lower in Lao PDR than in Japan, while prevalence of subjects with impaired glucose tolerance and anemia were higher in Lao PDR than in Japan. Higher prevalence of diabetes mellitus and anemia in the elderly population in Songkhon district should be cleared in this second study.

The purpose of this study is to clarify the relationship of diseases and disabilities with ecological factors in elderly people living in Paxon and compare with the previous results in Lahanam villages in Songkhon district. The second purpose is to clarify the exact prevalence of diabetes mellitus, impaired glucose tolerance and anemia and find out those causes.

SUBJECTS AND METHODS

(A) Comprehensive geriatric assessment

Study population consisted of 313 elderly people (M:F=126:187, mean age: 69 years old) living in 9 villages (Lakmenang, Lattanalasy, Nakhammonh, Nouanvilay, Paxon, Oudomsine, Salakham, Sebouhenang, Thongsy mouang) in Songkhon district in Savannaket Province.in Lao PDR.

Each of all the elderly residents were interviewed a 63-item questionnaire. We assessed activity of daily living (ADL), quantitative quality of life (QOL), depressive tendency by each interview as well as blood pressure measurements, physical examination and blood chemical analysis. For basic-ADL assessment, each subject rated his/her independence in seven items (walking, ascending and descending stairs, feeding, dressing, toileting, bathing, grooming). Each Basic-ADL item was evaluated along four levels: 3=completely independent; 2=needing some help; 1=needing much help; 0=completely dependent. Then each item score was summed up to generate the total basic ADL score ranging from 0 to 21. For higher-level functional capacity, each subject rated his/her independence in the Tokyo Metropolitan Institute of Gerontology (TMIG) index of competence. This consists of a 13-item index including 3 sublevels of competence; (1) instrumental self-maintenance (5 items; the ability to use public transport, buy daily necessities, prepare a meal, pay bills, handle banking matters, rated on a yes/no basis), (2) intellectual activities (4 items; the ability to fill forms, read newspapers, read books or magazines and interest in television programs or news articles on health-related matters, rated on a yes/no basis) , (3) Social role (4 items, the ability to visit own friends, give advice to relatives and friends who confide, visit someone at the hospital and initiate conversation with younger people, rated on a yes/no basis). QOLs were assessed using a 100 mm visual analogue scale (VAS) (worst QOL on the left end of the scale, best on the right) in the following five items; subjective sense of health, relationship with family, relationship with friends, financial status and subjective happiness. We have already confirmed inter-rater reliability ($R=0.74$) and intra-rater reliability ($R=0.82$) of VAS. We also assessed living condition, lifestyle, social and medical histories (hypertension, current use of anti-hypertensives, histories of stroke, heart disease and osteoarthropathies). We screened for depressive symptoms using GDS-15 with a cut-off point of 6 and 10 or more, The GDS-15 has a sensitivity of 88% to 92% and specificity of 62% to 81%, as compared with a structured clinical interview for depression. We defined depression as a GDS-15 score of 6 or more, with a score of 6 to 9 indicating "mild depression" , and a score of 10 or more "severe depression" . The GDS-15 approximately 4 minutes to complete and score. In cases where the elderly were not able to directly answer to the questions (e.g. not being able to read or write clearly), caregiver helped them to complete the interview. Blood chemical analysis included serum total protein, albumin, total cholesterol, HDL-cholesterol, blood urea nitrogen (BUN), creatinine, uric acid (UA) and hemoglobin concentration (Hb).

(B) Further examination for diabetes mellitus and impaired glucose tolerance

“75g oral glucose tolerance test”

For the 100 elderly subjects in Lahanum zone who had high casual glucose level (BS>110 mg/dl) and 132 people in Paxon zone (BS>120 mg/dl) in the ordinary blood examination, we explained and told them to come again in fasting state. Blood tests will be carried out three times, i.e. before, 30 min, and 120 min after oral 75g glucose intake. Blood sugar and insulin were examined. Glucose tolerance tests were done also for the 80 elderly with high blood sugar in the survey in this February in Lahanum zone and 122 elderly in Paxon zone.

RESULTS & DISCUSSION

Comparative study in comprehensive geriatric assessment between Lahanam and Paxon (Table-1,2,3)

There was no difference in basic ADL between elderly people in Lahanam and Paxon. Compared with elderly people in Lahanam, instrumental ADL, intellectual activity and social role were higher than those in Paxon. Prevalence of depression was lower in those in Paxon than in Lahanam and QOLs of subjective health, financial satisfaction and subjective happiness were higher in elderly people in Paxon than those in Lahanam, while QOLs of family or friend relationship were lower in elderly people in Paxon than those in Lahanam. There was no difference in body mass index between elderly people in Lahanam and Paxon. Prevalence of hypertension, mean HDL cholesterol level, creatinine, and hemoglobin level were higher in elderly people in Paxon than those in Lahanam, while prevalence of subjects with anemia was lower in elderly people in Paxon than those in Lahanam. Higher prevalence of diabetes mellitus and anemia were shown in the elderly population in both Lahanam and Paxon.

The differences in comprehensive geriatric assessment between 2 areas seemed to be influenced by the economical progress in Paxon compared with Lahanam.

Further examination for diabetes mellitus and impaired glucose tolerance

The prevalence of DM (2h BS>200 mg/dl) was as much as 16% and that of impaired glucose tolerance (IGT) (2h BS>140 mg/dl) was 11 % in Lahanum after 75 g oral glucose tolerance test. We explained characteristics of the disease to each elderly subject with DM or IGT and recommended them to begin reducing diet and doing exercise every day. For subjects with severe DM we introduced them to medical doctors.

There are two possibilities for the cause of DM. One is insufficient secretion of insulin by previous low nutrition and another is insulin resistance by malnutrition Diabetes. We are on going to pursue the mechanism of DM by analyzing the change of insulin and more detailed serum glucose levels in 75 g OGTT.

CONCLUSION

313 Community-dwelling elderly aged 60 years old or more in 9 villages including Paxon in Sogkhon District in Savannakhet Province in Lao PDR were assessed by comprehensive geriatric assessment. They had superior instrumental and intellectual activities and QOL of subjective health, financial satisfaction and subjective happiness and lower prevalence of depression, but inferior QOL of family or friend satisfaction compare with elderly people in Lahanum. Elderly people in Lahanam had better nutritional state in protein and lower rate of anemia. The prevalence of high blood sugar was the same between those in 2 areas. In the exact test of 75 g OGTT the prevalence of DM and IGT were very high. The prediction and prognosis of the diabetes mellitus in the elderly in Lao is the important issue to be clarified and we should follow up them longitudinally.

Acknowledgement

We thank to all of the Provincial Health Department in Savannakhet Province, and to all of the District Health office in Songkhone District. We also express our cordial gratitude to all of the elderly people joining the medical research project.

Table 1: Comparison of ADLs and QOLs between the Community-Dwelling Elderly living in Lahanam and in Paxon.

	Lahanam in Lao PDR (N=294)	Paxon in Lao PDR (N=313)	p
ADLs			
Scores of Basic ADL(0-21)	20.2±2.0	20.2±2.6	ns
Scores of Instrumental ADL (0-5)	3.2±1.5	3.7±1.6	0.0002
Scores of Intellectual ADL (0-4)	1.3±1.3	1.6±2.3	0.02
Scores of Social Role (0-4)	3.2±1.1	3.4±1.4	0.009
Scores of TMIG (0-13)	7.7±3.2	8.6±3.6	0.0004
Depression			
Scores of Geriatric Depression Scale (0-15)	5.6±2.8	3.7±2.6	<0.0001
QOLs (0-100)			
Subjective Health	55.4±16.9	65.0±17.0	<0.0001
Family Relationship	71.7±16.9	69.0±14.2	0.03
Friend Relationship	74.3±17.4	71.6±18.2	0.07
Financial Satisfaction	50.0±11.7	53.8±14.5	0.0006
Subjective Happiness	66.2±17.3	71.3±13.0	<0.0001

Table.2 Comparison of Anthropometrical Indicators and blood pressure between the Community-Dwelling Elderly in Lao PDR and in Japan

	Songkhon in Lao PDR (N=294)	Paxon in Lao PDR (N=313)	p
Anthropometrical			
Height (cm)	151.4±7.3	151.2±8.6	ns
Weight (kg)	49.2±10.1	50.1±10.8	ns
Body Mass Index (BMI)	21.4±3.8	21.8±3.8	ns
Blood Pressure			
Systolic Blood Pressure (mmH)	136±22	142±24	0.001
Diastolic Blood Pressure (mm)	80±12	83±13	0.01
Prevalence of Hypertension (%) (SBP>140 orDBP>90)	39.5	53.0	0.001

Table.3 Comparison of Blood Chemical Findings between the Community-Dwelling Elderly in Lao PDR and in Japan

	Songkhon in Lao PDR (N=294)	Paxon in Lao PDR (N=313)	p
Total protein (g/dl)	7.3±0.6	7.6±0.7	<0.0001
Albumin (g/dl)	3.8±0.4	4.1±0.4	<0.0001
Total cholesterol (mg/dl)	161.7±45.4	167.0±39.1	ns
HDL-cholesterol (mg/dl)	23.4±8.7	33.0±8.9	<0.0001
Atherogenic Index	6.8±3.4	4.1±0.8	<0.0001
creatinine (mg/dl)	0.96±0.53	1.1±0.56	0.002
Blood Sugar (mg/dl)	136.5±74.0	137.1±80.6	ns
% of Impaired Glucose Tolerance	28.3	27.2	ns
% of Diabetes type (BS≥200mg/dl)	11.8	15.3	ns
Hemoglobin (g/dl)	9.3±1.4	10.2±1.8	<0.0001
% of anemia (men:Hb<13g/dl,	98.4	90.4	<0.0001
Uric acid (mg/dl)	6.0±5.2	5.8±2.9	ns
GOT (IU/L)	34.9±25.4	29.3±15.0	0.001
GPT (IU/L)	32.8±21.8	29.9±20.1	ns

ACKNOWLEDGEMENT

We thank to all of the Provincial Health Department in Savannakhet Province, and to all of the District Health office in Songkhone District. We also express our cordial gratitude to all of the elderly people joining the medical research project.

Counterparted (LAO PDR) by :

Bounngong Boupaha, MD, PhD, Director of National Institute of Public Medicine, Lao PDR

Bounlom Keoubouahom, MD, Dr of National Institute of Public Medicine, Lao PDR

Rasami Siengsounthon, MD, Dr of National Institute of Public Medicine, Lao PDR

Xida Xyavong, MD, Dr of National Institute of Public Medicine, Lao PDR

Sayadeth Chanthavong, MD, Dr of National Institute of Public Medicine, Lao PDR

Phonepadith Xawgsayalhth, Dr of National Institute of Public Medicine, Lao PDR

Tiengkham Pongvongsa, MD, Director of Station of Malariology, Parasitology and Entomology,
Savannakhet Province

Kinta Bayavong, Director, Provincial Health Department, Savannakhet Province

Panom Phongmany, Deputy Director, Provincial Health Department, Savannakhet Province

Sisavey Donovanchantanta, MD (Collaborator), Director of Sgongkhon District Hospital

Thongkham (Collaborator), Nurse of Sgongkhon District Hospital

Bualee Vongsamphanh (Translator)

Nouda Parasith (Translator)