

Inner Ear Problems of Thai Priest at Priest Hospital

Taweporn Karnchanakas MD*,
Are Tantanavat*, Jamjan Sinsakontavat*

* Department of Ear Nose Throat, Priest Hospital

Background: The inner ear problems of Thai priest at Priest Hospital had never been reported previously, so Department of Ear Nose Throat try to correlate the metabolic disorder with inner ear problems.

Objectives: 1) To study the fasting blood sugar(FBS), total cholesterol(T.Chol), low density lipoprotein(LDL), and triglyceride(TG), the factors expected to involve in inner ear problems of priests at Priest Hospital.

2) To compare the FBS, T. Chol, HDL, LDL, and TG of priests with inner ear problems at Priest Hospital. 3) To find the percentage of abnormal from FBS, T.Chol, LDL, and TG.

Material and Method: The study using 83 sampling of priests with inner ear problems and 107 priests as a controlled group. The research instruments used to collect data was the questionnaire which composed of general information, physical, ear-nose-throat and neurological examination, pure tone audiometry, brainstem evoke response audiometry(BERA) and the blood tests :FBS,T.Chol. TG, and LDL. The inner ear problems were composed of : 1) Dizziness 2) Hearing Loss 3) Tinnitus Aurium. The descriptive statistics were used to analyze the data from questionnaires and utilized frequency, percentage, standard deviation (S.D.) and t-test to achieve desired results.

Results: Priest at middle age and elderly with inner ear problems had greater FBS and TG than expected values of the control group.

Conclusion: The middle age and elderly priests who had greater FBS and TG than expected values were sick with inner ear problems that causing dizziness, hearing loss and tinnitus aurium.

Keywords: Health, Inner ear, Priest, T. Chol, LDL, TG, FBS

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The incidence of diabetes (DM) type II, dyslipidemia, and inner ear problems such as Idiopathic Sensory Neural Hearing Loss (ISNHL) caused vertigo, tinnitus aurium had increased all over⁽¹⁻⁸⁾ including in Priest Hospital. Since many clinical researchers try to correlate the metabolic disorder such as DM, dyslipidemia with inner ear problems. Department of Ear Nose Throat of Priest Hospital provides a tertiary health care for all ear nose throat problems of Thai Priest⁽⁹⁻¹¹⁾. Since DM and dyslipidemia were the metabolic problems, thus, they could contribute to many others seriously and high cost complications. The routine check up for FBS, TG and LDL, nowadays, were

not performed routinely in Thai government hospitals. From many recent international clinical research and documents, they try to correlate the metabolic problems with the inner ear conditions. Thai priests have differently life style by eating 1 or 2 meals a day. Thai Buddhism likes to prepare their best and most delicious foods with high sugar, high lipid, and high cholesterol for the priest. Priest can not cook their own food and they would eat the given food from Thai Buddhism. The study was setting up at Priest Hospital during the year 2005-2007.

Material and Method

The research was performed in 83 priests with inner ear problem compared to the healthy control group of 107 priest at Priest Hospital, from February 2005 to July 2007. Research instrument used for

Correspondence to: Karnchanakas T, Department of Ear Nose Throat, Priest Hospital, Bangkok 10400, Thailand. E-mail: tweporn@yahoo.com

collecting data was the questionnaire which composed of the answer of general information, physical examination, ear nose throat and neuroexamination, pure tone audiometry, BERA and the laboratory tests such as fasting blood sugar, T.Chol, TG, LDL. They correlated to the other hand of inner ear problems for three aspects: 1) Dizziness 2) Hearing Loss 3) Tinnitus aurium. Those with abnormal neuroexamination, positive BERA test which suggested retrocochlea hearing loss, SNHL presbycusis and cardiovascular problem were excluded.

Results

From Table 1, the priests with inner ear problem were in the age range of 55-74 years which were middle and elderly group (Table 1). The result of FBS, TC, LDL and TG of the patients were significantly higher than the control group in all age range of the patients (Table 2) but only FBS had clinical significantly (Table 3, 4). When age group were considered, clinical significant of higher FBS were confirmed in every age group but TG was higher in the elderly group (65-74 years) only (Table 5, 6).

Discussion

With the conceptual framework^(12,13) as shown in Fig. 1, the serum level of TC, FBS, LDL and TG were studied in priests with inner ear problems and compared to the control group. Due to the nature of retrospective study, the higher frequency of patients with inner ear problems were found in the middle and elderly group which could be a real frequency of inner ear patients or higher frequency of OPD patients in these age group (Fig. 2). From the study, the result obtained were contrast to the conceptual framework due to only FBS showed a correlation to patients with inner ear diseases. The next step of inner ear diseases

Table 1. The frequency and percentage of the samples were distributed according to the age range

Age range (years)	Control	Patients with inner ear problem
35-44	39	12
45-54	23	13
55-64	19	29
65-74	11	24
75-84	15	5
Total	107	83

Table 2. Showing the laboratory result of the controlled group and samples group

Age range (years)	35-44		45-54		55-64		65-74		75-84		Total	
	Control	Patient	Control	Patient	Control	Patient	Control	Patient	Control	Patient	Control	Patient
Number	39	12	23	13	19	29	11	24	15	5	107	83
FBS value (70-110 mg %)	79.41	91.67	84.61	118.08	81.95	111.45	82.45	121.96	83.20	104.20	-6.88	0.00
Cholesterol value (150-200 mg %)	219.95	234.83	227.52	234.92	206.16	220.90	233.36	220.08	216.67	238.60	-0.89	0.37
LDL value (<160 mg %)	136.03	142.25	137.78	121.54	116.21	122.72	143.55	126.50	133.27	145.60	0.82	0.41
Triglyceride value (30-170 mg %)	129.72	155.17	142.61	178.54	140.47	135.00	165.45	130.08	114.87	138.60	-0.82	0.41

Table 3. The result of FBS was significant high for all range of ages, but the total TG was significant high only in the elderly group.

Age range (years)	35-44		45-54		55-64		65-74		75-84		Total	
	t-test	p-value	t-test	p-value	t-test	p-value	t-test	p-value	t-test	p-value	t-test	p-value
Number	39	12	23	13	19	29	11	24	15	5	107	83
FBS value (70-110 mg %)	-2.511	0.015*	-3.162	0.003*	-2.875	0.006*	-3.480	0.001*	-1.774	0.093	-6.884	0.000*
Cholesterol value (150-200 mg %)	-1.231	0.224	-0.624	0.537	-1.134	0.263	0.657	0.516	-0.785	0.443	-0.894	0.373
LDL value (<160 mg %)	-0.575	0.568	1.101	0.278	-0.509	0.613	0.917	0.366	-0.470	0.644	0.824	0.411
Triglyceride value (30-170 mg %)	-1.245	0.219	-1.228	0.228	0.297	0.767	2.226	0.033*	-1.224	0.237	-0.822	0.412

Table 4. Results of values and control values of inner ear patients in Priest Hospital.

Over view	Population	Number	Mean	Std. deviation	Std. error mean	t-test	p-value
FBS value (70-110mg %)	Control	107	81.8224	18.9925	1.8360702	-6.884	0.000
	Patient	83	112.229	36.5995	4.0173121		
Cholesterol value (150-200mg %)	Control	107	220.047	41.186	3.9816052	-0.894	0.373
	Patient	83	225.94	49.6552	5.4503705		
LDL value (<160mg %)	Control	107	133.271	39.7667	3.8443892	0.824	0.411
	Patient	83	127.831	48.8726	5.3644661		
Triglyceride value (30-170mg %)	Control	107	135.991	61.1982	5.9162511	-0.822	0.412
	Patient	83	143.53	64.6837	7.0999608		

FBS = Fasting blood sugar; HDL = High density lipoprotein; LDL = Low density lipoprotein.

Table 5. Results of comparison of dizziness, hearing loss, and tinnitus aurium of middle age priests were analyzed at Priest Hospital, Bangkok

Age 35-44 years	Population	Number	Mean	Std. deviation	Std. error mean	t-test	p-value
FBS value (70-110mg %)	Control	39	79.4103	16.093	2.5769449	-2.511	0.015*
	Patient	12	91.6667	8.90693	2.5712081		
Cholesterol value (150-200mg %)	Control	39	219.949	39.2408	6.2835549	-1.231	0.224
	Patient	12	234.833	25.619	7.3955692		
LDL value (<160mg %)	Control	39	136.026	34.6922	5.5552054	-0.575	0.568
	Patient	12	142.25	25.2303	7.2833611		
Triglyceride value (30-170mg %)	Control	39	129.718	58.6744	9.3954183	-1.245	0.219
	Patient	12	155.167	72.0452	20.797666		

Age 45-54 years	Population	Number	Mean	Std. deviation	Std. error mean	t-test	p-value
FBS value (70-110mg %)	Control	23	84.6087	19.9151	4.1525929	-3.162	0.003*
	Patient	13	118.077	43.7044	12.121427		
Cholesterol value (150-200mg %)	Control	23	227.522	34.9621	7.2901118	-0.624	0.537
	Patient	13	234.923	32.712	9.0726848		
LDL value (<160mg %)	Control	23	137.783	38.2646	7.9787159	1.101	0.278
	Patient	13	121.538	49.3451	13.68586		
Triglyceride value (30-170mg %)	Control	23	142.609	65.8702	13.73489	-1.228	0.228
	Patient	13	178.538	110.456	30.634867		

study should focus on diabetic priests to prove this relationship.

Conclusion

FBS, TC, LDL and TG of the priests with inner ear diseases (dizziness, hearing loss and tinnitus aurium) were studied. The result showed only the correlation with higher fasting blood sugar in all age group of 35-84 years and higher triglyceride only in elderly group.

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Table 6. Showing the results of comparison of Dizziness, Hearing Loss, and Tinnitus Aurium of elderly were analyzed

Age 55-64 years	Population	Number	Mean	Std. deviation	Std. error mean	t-test	p-value
FBS value (70-110mg %)	Control	19	81.9474	21.0989	4.8404205	-2.875	0.006*
	Patient	29	111.448	41.2281	7.6558658		
Cholesterol value (150-200mg %)	Control	19	206.158	32.8164	7.5286055	-1.134	0.263
	Patient	29	220.897	57.0897	10.601299		
LDL value (<160mg %)	Control	19	116.211	34.2452	7.8563785	-0.509	0.613
	Patient	29	122.724	54.4117	10.104003		
Triglyceride value (30-170mg %)	Control	19	140.474	74.2416	17.032197	0.297	0.767
	Patient	29	135	53.3164	9.9006145		

Age 65-74 years	Population	Number	Mean	Std. Deviation	Std. error mean	t-test	p-value
FBS value (70-110mg %)	Control	11	82.4545	21.2714	6.4135703	-3.480	0.001*
	Patient	24	121.958	34.6127	7.0652957		
Cholesterol value (150-200mg %)	Control	11	233.364	52.6047	15.860914	0.657	0.516
	Patient	24	220.083	56.7542	11.584897		
LDL value (<160mg %)	Control	11	143.545	48.2522	14.548579	0.917	0.366
	Patient	24	126.5	52.1903	10.653298		
Triglyceride value (30-170mg %)	Control	11	130.083	39.2161	8.0049615	2.226	0.033*
	Patient	24	165.455	52.4106	15.802395		

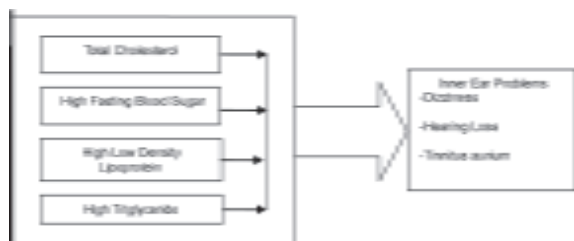


Fig. 1 Illustrates the conceptual framework for this study

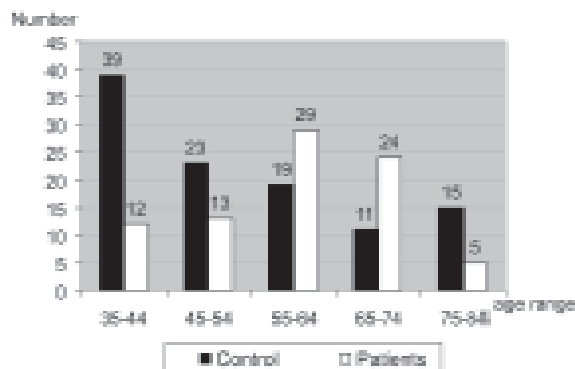


Fig. 2 Showing the mean of controlled group and experimental group in all range of ages

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การศึกษาภาวะสุขภาพพระสงฆ์อาพาธด้วยโรคหูชั้นใน ในโรงพยาบาลสงฆ์

ทวีพร กาญจนากาศ, อารีย์ ตันธนะวัฒน์, แจ่มจันทร์ สินสกมลวัฒน์

วัตถุประสงค์: การตรวจภาวะสุขภาพของพระสงฆ์จำนวน 83 รูป ที่อาพาธด้วยโรคหูชั้นใน และนำมาเปรียบเทียบกับพระสงฆ์ปกติ เพื่อศึกษา 1) FBS, T.Chol, LDL, TG ที่เป็นตัวต้นเหตุของอาการโรคหูชั้นใน 2) เพื่อเปรียบเทียบ FBS, T.Chol, HDL, LDL, และ TG ของพระภิกษุที่ป่วยด้วยโรคหูชั้นในและพระภิกษุปกติ 3) เพื่อหาความสัมพันธ์ของโรคหูชั้นในกับ FBS, T.Chol, LDL, และ TG

วัสดุและวิธีการ: เก็บข้อมูลจากกลุ่มตัวอย่างคือพระสงฆ์จำนวน 83 รูป ที่ป่วยเป็นโรคหูชั้นใน ในโรงพยาบาลสงฆ์ และกลุ่มตัวอย่าง พระสงฆ์ปกติจำนวน 107 รูป ในการเก็บข้อมูลใช้แบบสอบถาม ที่ถามข้อมูลด้าน audiometry (BERA), สถิติที่ใช้เป็นสถิติเชิงพรรณนา ซึ่งมีทั้งค่าร้อยละ ค่าเบี่ยงเบนมาตรฐาน และค่า t-test

ผลการศึกษา: ผลเลือดที่มีค่า FBS, T.Chol, LDL, และ TG มีความสัมพันธ์กับปัญหาของโรคหูชั้นใน เช่น Dizziness, Hearing Loss, และ Tinnitus Aurium พระสงฆ์ที่มีอายุปานกลาง และพระสงฆ์สูงอายุมีค่า FBS และ TG สูงกว่ากลุ่มควบคุม

สรุป: พระสงฆ์ที่ป่วยเป็นโรคหูชั้นในโดยมีอาการเวียนศีรษะ สูญเสียการได้ยิน และเสียงดังในหู ในกลุ่มที่มีอายุปานกลางและสูงอายุ จะมีค่า FBS และ TG สูงกว่าปกติ
