Hypertension in Elderly Japanese Americans and Adult Native Hawaiians

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SYNOPSIS

POPULATION-BASED DATA ON HYPERTENSION IN HAWAII are limited. Two groups for which data from the 1980s exist are Japanese-American men ages 60 to 81 in the Honolulu Heart Program (HHP) and native Hawaiians ages 20 to 59 in the Molokai Heart Study (MHS). In the elderly HHP men, the mean systolic blood pressure (SBP) was higher and the mean diastolic blood pressure (DBP) was lower in the older age groups. In the MHS, both the mean SBP and the mean DBP were higher with increasing age in both sexes.

Among Japanese-American men, 53% of those ages 60 to 64 were hypertensive (SBP greater than or equal to 140 mmHg or DBP greater than or equal to 90 mmHg, or taking antihypertensive medications), as were 59% of those ages 65 to 74, and 67% of those ages 75 to 81. Among native Hawaiians, 6% of men and 8% of women ages 20 to 24 were hypertensive, as were 37% of men and 41% of women ages 45 to 54. At ages 55 to 59 the prevalence for men was 31%; and for women, 33%.

These data indicate that hypertension is relatively common in both ethnic groups; however, native Hawaiians appear to be at greater risk of cardiovascular disease overall.

The multicultural environment of Hawaii offers an ideal setting in which to study hypertension in minority individuals. However, limited population-based data on hypertension are available in Hawaii. Two groups that have been studied are the Japanese-American cohort in the HHP and the native Hawaiians in the MHS.

Methods

The Honolulu Heart Program (HHP) is a prospective epidemiologic study of cardiovascular disease and its risk factors initiated by the National Heart, Lung, and Blood Institute in 1965 among 8006 Japanese-American men ages 45 to 65 and living on the island of Oahu *(1,2)*. Data reported here are from an examination of a 30% random sample of the population during the years 1980 to 1982 when the men were between the ages of 60 and 81.

Table 1. The number and percent of native Hawaiians and Japanese Americans with optimal blood pressure and hypertension from the Molokai Heart Study (1984) and the Honolulu Heart Program (1980 to 1982)

		Native Hawaiian			Japanese American		
			Blood Pressure			Blood Pressure	
Sex	Age	n	% Optimal*	% Hypertension**	n	% Optimal*	% Hypertension**
Males	20–24	17	35.0	6.0			
	25–34	24	54.0	8.3			
	35–44	34	26.5	35.3			
	45–54	30	36.7	36.7			
	55–59	13	23.1	30.8			
	60–64				445	14.2	53.3
	65–74				752	12.8	59.4
	75–81				181	7.2	66.9
Females	20–24	13	84.6	7.7			
	25–34	33	81.8	6.1			
	35–44	39	64.1	20.5			
	45–54	34	20.6	41.2			
	55–59	12	16.7	33.3			

* SBP <120 mmHg and DBP <80 mmHg and not on antihypertensive medications
** SBP ≥140 mmHg or DBP ≥90 mmHg or taking antihypertensive medications

The Molokai Heart Study (MHS) was a study of cardiovascular disease risk factors in 250 male and female native Hawaiians between the ages of 20 and 59 living on the rural island of Molokai *(3)*. The survey was carried out in 1985 in conjunction with the INTERSALT project, an international cooperative study on sodium intake and blood pressure *(4)*. The blood pressure measurement, training, and data collection instruments were those of INTERSALT *(4)*.

In both the HHP and the MHS, three blood pressures were measured in a sitting position, with a standard sphygmomanometer in the HHP and a random zero sphygmomanometer in the MHS. The mean of the last two measurements from both studies as utilized in these analyses.

Results

In the HHP, the mean SBP increased with age, from 136 mmHg in those ages 60 to 64, to 145 mmHg in those ages 75 to 81 (mean blood pressures not shown). The mean DBP fell from 82 mmHg in those ages 60 to 64 to 79 mmHg in those ages 75 to 81. In the MHS, the mean SBP rose from 122 mmHg in men ages 20 to 24, to 131 mmHg in men ages 55 to 59, and from 110 mmHg to 132 mmHg in those same age groups in women. The mean DBP rose from 67 mmHg to 80 mmHg in men and 61 mmHg to 77 mmHg in women in the same age groups.

As seen in Table 1, if optimal blood pressure was defined as a SBP less than 120 mmHg and a DBP less than 80 mmHg, only 14% of the Japanese men examined in 1980 to 1982 in the HHP who were ages 60 to 64 met such criteria, as did 13% of those ages 65 to 74, and 7% of those ages 75 to 81. Among the native Hawaiians in the MHS in 1985, 35% of the men and 85% of the women ages 20 to 24 had optimal blood pressures by these criteria. The prevalence of optimal blood pressure fell to 23% in men and 17% of women ages 56 to 59.

Among the Japanese men in the HHP, 53% of those ages 60 to 64 were hypertensive (SBP ≥140 mmHg, DBP ≥90 mmHg, or taking antihypertensive medications), as were 59% of those 65 to 74, and 67% of those ages 75 to 81. Among native Hawaiians in the MHS, 6% of men and 8% of women ages 20 to 24 were hypertensive, and this proportion was highest in those ages 45 to 54 (37% of men and 41% of women). The prevalence at ages 55 to 59 was somewhat lower, 31% of men and 33% of women. Anecdotal information indicated that a number of high-risk native Hawaiians from the community who were in that age group had died from cardiovascular events in the months prior to the MHS survey.

A high proportion of the Japanese men were aware of having hypertension, ranging from 81% in those ages 60 to 64 to 89% in those ages 75 to 81 (Table 2). The percent treated was lowest in the oldest group (44%), but not very different from the youngest group (49%). The percent with controlled hypertension ranged from 24% in the youngest group to 13% in the oldest. Among the native Hawaiians, the numbers are too small to determine age trends, but 80% of males and 86% of females for the total group were aware of having high blood pressure. Of the hypertensive participants, 30% of males and 54% of females were treated. Twenty percent of the hypertensive men and 40% of the hypertensive women had their blood pressure treated and controlled.

Although diabetes data are not shown here, the prevalence of diabetes by history was 12% in Japanese men ages 60 to 64 (of whom 62% were hypertensive), 16% in those ages 65 to 74 (of whom 69% were hypertensive), and 13% in those ages 75 to 81 (of whom 78% were hypertensive). Among native Hawaiians, the numbers were too small for age-specific rates, but overall, 8.5% of the men and 8.6%

Table 2. Percent of native Hawaiians and Japanese Americans with hypertension who were aware of the condition, under treatment for it, and whose blood pressure was controlled

Native Hawaiian					Japanese American				
Sex	Age	% Aware	% Treated	% Controlled	Sex	Age	% Aware	% Treated	% Controlled
Male	20–59	80.0	30.0	20.0	Male	60–81	84.0	49.8	20.4
Female	20–59	85.7	53.6	39.3					
					Male	60–64	80.6	48.9	24.1
						65–74	84.3	51.9	20.4
						75–81	89.3	43.8	13.2

of the women were diabetic by history. Among the diabetic native Hawaiians, 30% of the men and 45% of the women were hypertensive.

Discussion

Despite the fact that Asian and Pacific Island people form an important and growing segment of the U.S. population, there are relatively little population-based data on blood pressure and hypertension in these minority groups. Most of the available data have been gathered with questionnaires and do not include estimates based on actual measurement of blood pressure. Health-related data on the various ethnic groups and populations that comprise the category Asian and Pacific Islander are often lumped under that label. Unfortunately this practice has served to mask the great disparities in the prevalence rates for the populations within this category. For example, within the state of Hawaii data from vital statistics would indicate that the Japanese-American population has one of the longest life expectancies at birth in the world, greater than 80 years in men in 1980 *(5)*. On the other hand, the same data indicate that native Hawaiians have life expectancies at birth of less than 65 years. Native Hawaiians also appear to have much higher cardiovascular disease death rates than other ethnic groups in Hawaii *(6)*.

Japanese Americans tend to have heart disease and stroke rates that are lower than those in the U.S. white population *(7)*. Among the aging members of the HHP, this pattern is present despite the fact that rates of hypertension and hypercholesterolemia are now similar to those of elderly U.S. whites *(8)*. Lower prevalence of current smoking, dietary factors, and more active lifestyles may help to explain these differences.

It is difficult to compare the data for the two ethnic groups in this paper due to age differences; however, in the baseline examination from 1965 to 1968, if the same criteria for hypertension were applied, 36% of the Japanese men ages 45 to 54 had hypertension compared to 30% of the native Hawaiians in that age group in the MHS in 1985. The age-specific levels of hypertension in native Hawaiians in the MHS were also similar to those for U.S. whites collected from 1976 to 1980 as part of the National Health and Nutrition Examination Survey *(4,9)*. The data available from the MHS indicate that native Hawaiians may be at high risk of premature cardiovascular disease secondary to obesity, hypertension, hypercholesterolemia, low levels of HDL cholesterol, smoking, and abnormalities in glucose metabolism. Although they appear relatively aware of hypertension, control is less than ideal. Health care system deficiencies and lack of information about many less easily measured factors may contribute to cardiovascular risk among native Hawaiians. Current efforts are underway to gather more data on cardiovascular risk and to improve the health care of native Hawaiians in culturally relevant ways *(10)*.

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