

The Birmingham [Alabama] 1964 Diabetes Detection Drive: VI.

Frequency of Reported Hypertension

E. Cheraskin, M.D., D.M.D.,* W. M. Ringsdorf, Jr., D.M.D., M.S.**
and R. A. Barrett, D.D.S.***

Introduction

Earlier reports have described the general design of the 1964 Birmingham [Alabama] Diabetes Detection Drive,¹ the relationship of age,² sex,³ weight,⁴ and the ponderal index⁵ to blood glucose as determined by the Dextrostix method. This, the sixth report in the series, has a two-fold purpose. First, the usual detection drive is designed to identify previously unrecognized diabetes mellitus. Once these persons have been properly routed for additional study, the remaining information is discarded. This series of reports is derived exclusively from the discarded data. Specifically, this paper analyzes the frequency of reported hypertension. Second, this report serves as a prelude⁶ to the consideration of reported hypertension and carbohydrate metabolism in the participants of the 1964 Birmingham [Alabama] Diabetes Detection Drive. Justification for such an analysis stems from the increasing evidence⁷⁻¹¹ of a relationship between diabetes mellitus and cardiovascular disease.

An attempt will be made in this report to answer the following two questions:

1. What is the overall age and sex distribution of reported hypertension in a group of persons motivated to participate in a diabetes detection drive?
2. How do the figures compare with the

frequency of hypertension in the general population?

Method of Investigation

Eight thousand nine hundred and forty persons participated in the Birmingham [Alabama] 1964 Diabetes Detection Drive. After the project was completed and the suspected diabetics routed to their private physicians, each participant was requested to complete a simple self-administered health questionnaire [Cornell Medical Index Health Questionnaire].¹²⁻²⁰ At the time of this writing, 1498 individuals have responded with a completed questionnaire. Table 1 is the age and sex distribution.

Within the form, one question deals specifically with hypertension. Specifically, Question #28 [Section C] of the Cornell Medical Index Health Questionnaire asks, "Has a doctor ever said your blood pressure was too *high*?"

Results

For the entire group of 1498 respondents, 1085 [72.4%] answered negatively (Table 2). One-half of one per cent [7 persons] did not complete the question. Nineteen [1.3%] answered both yes and no and then appended an unsolicited comment. Most importantly, 387 [25.9%] indicated unequivocally that a doctor informed them that they had hypertension. Further examination [Table 2] discloses that the percentage of male and female affirmative responses was very similar.

The reported hypertension frequency in terms of age and sex is presented in Table

*Professor and Chairman, Department of Oral Medicine, University of Alabama Medical Center, Birmingham, Alabama.

**Associate Professor, Department of Oral Medicine, University of Alabama Medical Center, Birmingham, Alabama.

***Presently Fellow of the National Heart Institute, Public Health Service.

TABLE 1
AGE AND SEX DISTRIBUTION

Age Groups	Male Group	Female Group	Total
0-9	3 [0.20%]	8 [0.53%]	11 [0.73%]
10-19	22 [1.47%]	46 [3.07%]	68 [4.54%]
20-29	36 [2.40%]	69 [4.61%]	105 [7.01%]
30-39	51 [3.40%]	123 [8.21%]	174 [11.62%]
40-49	68 [4.54%]	188 [12.55%]	256 [17.09%]
50-59	96 [6.41%]	258 [17.22%]	354 [23.63%]
60-69	102 [6.81%]	242 [16.15%]	344 [22.96%]
70-79	61 [4.07%]	103 [6.88%]	164 [10.95%]
80-91	13 [0.87%]	8 [0.53%]	21 [1.40%]
Not determined	0 [0.00%]	1 [0.07%]	1 [0.07%]
Total	452 [30.17%]	1046 [69.76%]	1498 [100.00%]

TABLE 2
FREQUENCY DISTRIBUTION OF REPORTED HYPERTENSION

Type of Response	Male Group	Female Group	Total Group
Negative	340 [75.2%]	744 [71.2%]	1084 [72.4%]
Positive	103 [22.8%]	285 [27.3%]	388 [25.9%]
No answer	0 [0.0%]	7 [0.7%]	7 [0.5%]
Negative-positive with comment	9 [2.0%]	10 [1.0%]	19 [1.3%]
Total	452 [100.0%]	1046 [100.0%]*	1498 [100.0%]*

*Approximate

TABLE 3
PERCENTAGE FREQUENCY REPORTED HYPERTENSION BY AGE AND SEX GROUPS

Age Groups	Male Group	Female Group	Total Group
0-9	0/3 [0.0%]	0/8 [0.0%]	0/11 [0.0%]
10-19	0/22 [0.0%]	6/45 [13.3%]	6/67 [8.9%]
20-29	3/35 [8.9%]	8/69 [11.6%]	11/104 [10.6%]
30-39	7/49 [14.3%]	15/120 [12.5%]	22/169 [12.4%]
40-49	10/68 [14.7%]	36/186 [19.4%]	46/254 [18.1%]
50-59	22/95 [23.2%]	69/254 [27.3%]	91/349 [26.1%]
60-69	33/98 [33.7%]	99/238 [41.6%]	132/336 [39.3%]
70-79	24/61 [39.3%]	47/101 [46.5%]	71/162 [43.8%]
80-91	4/12 [33.3%]	5/8 [62.5%]	9/20 [45.0%]
Total	103/443[23.3%]	285/1029[27.7%]	388/1472[26.4%]

3. Of those who responded negatively or positively [$n = 1472$], 388 [26.4%] gave an affirmative answer. For the total group, irrespective of sex, the percentage hypertension frequency progressively rises from zero in the youngest age group [0-9 years] to 45.0 percent in the oldest [80-91 years]. The female frequencies rise much faster and to a higher level. The maximum in the male is 39.3 percent in the 70-79 year age group. For the females aged 80-91 years, the figure is 62.5 percent.

Discussion

The purpose of the screening program was to ferret out previously unrecognized

diabetes mellitus. Many subjects participated because of an interest in diabetes mellitus, if any specific motivation could be identified. Overall, 26.4 percent of the subjects reported hypertension. The figures range as high as one in three to two out of the three in the male and female respectively. According to the findings of the Health Examination Survey [HES] for 1960-1962, approximately 15.3 percent of all noninstitutionalized United States adults in the age range 18-79 years were estimated to suffer with definite hypertension.²¹ If these two studies can be compared, and this must be done with caution, then the Birmingham frequency is almost twice that

reported in the general population.

Summary

1. Fourteen hundred and ninety-eight subjects who participated in the 1964 Birmingham [Alabama] Diabetes Detection Drive completed the Cornell Medical Index Health Questionnaire.
2. For the entire sample, hypertension was reported in 26.4 percent of the group.
3. In terms of age, reported hypertension rose from 0 percent in the youngest age group [0-9 years] to 33.3 percent in the ninth decade; for the females, the figures range from 0 percent in the youngest age group [0-9 years] to 62.5 percent in the 80-91 year old subjects.
4. The overall hypertension frequency figure of 26.4 percent is much higher than the 15.3 percent noted in the Health Examination Survey for noninstitutionalized United States adults in the age range 18 to 79 years.

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