Abstract

"A CARDIOVASCULAR SURVEY OF THE CHEST X-RAY IN NEARLY 5000 LIFE INSURANCE APPLICANTS: NORMAL STANDARDS AND DISTRIBUTION CURVES FOR RELATIVE HEART DIAMETER"

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We here report observed diameter of the cardiac silhouette relative to that predicted in the 1938 Clark-Ungerleider Table in 4962 New England Life policyholders with both a chest X-Ray and ECG interpreted 1954-1966 inclusive. Percentage ratios have been plotted and analyzed as distribution curves in standard, cardiovascular-rated and other rated cases, with the following principal findings:

1. Our distribution patterns of relative heart diameter (HD) are those of normal "bellshaped" curves, for 3096 men and 164 women age 20-74. There is no sex difference.

2. Our mean HD for standard issues is 97.2 percent of the Clark-Ungerleider, indicating that heart diameters observed in our standard insureds with normal ECG and X-Ray were on the average about 4mm or 3 percent below the heart diameters recorded by Ungerleider and Clark in their 1460 cases. This difference is highly significant (SD & 7.1 percent, SE & 0.13 percent).

3. Our results by age also show a significant increase of 2.1 percent, from 96.5 percent in 2137 men age 20-49, to 98.8 percent in 959 men age 50-74. This difference slightly exceeds that found by Ungerleider and Clark.

4. CV-rated cases show a significantly higher HD, 99.3 & 8.0 percent in 1121 men age 20-74, vs. 97.2 percent in 3096 men issued standard insurance. Although there were more cases with HD 112 percent or higher in the CV-rated group than in the standard group, this finding indicates a highly significant general increase in heart diameters within the acceptable standard range and the need for greater caution in underwriting heart diameters only slightly above the mean when a ratable CV impairment is also present.

5. Cases rated for non-CV reasons do not show this distinctive distribution but resemble the standard cases in their mean and SD.

6. The standard distribution curves, coupled with mortality data provide a basis for setting an upper confidence limit that excludes only 1 percent to 2 percent of the standard cases, but 5 percent or more of the CV-rated cases. Preliminary mortality results for standard issues show an overall mortality ratio of 70 percent vs. the 1965-70 IC Select tables, or 80 percent vs. NEL all standard issues, and lower mortality for subgroups with heart diameter above the mean than for subgroups with HD below the mean.

7. A simple method of adapting the Clark-Ungerleider table to these normal standards would be to obtain the observed HD as percent of predicted in the usual way, then to adjust by adding 4 percent age 20-44, 3 percent age 45-54 and 2 percent age 55 up. A suggested upper limit of "normal" for standard cases is 112 percent unadjusted and 115 percent adjusted.

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OF INTEREST

The Midwestern Medical Directors Association, at its semi-annual meeting November 9 at Bloomington, Illinois, celebrated its 25th anniversary and honored the eight past-presidents in attendance (Drs. Don Anderson, Bill Henry, Bob Brown, Ed Hard, Norm Scheibling, Mike Ellis, Don Chambers and Hunt Jones). Special recognition was also given to recent retirees, Drs. Martin Compton and Bob Brown.

President Dan Scott (State Farm) presided over the meeting, hosted by State Farm Insurance Company. Featured was a review of the epidemiological, clinical and insurance aspects of rheumatologic diseases presented by Alfonze Masi, M.D., Chairman of the Department of Medicine, University of Illinois at Peoria.

Newly elected officers are Dr. Bob Donauer (Prudential), President; Dr. Jim Bilyeu (Country Life), Vice-President; and Dr. Don Johnson (Sentry Insurance Company), Secretary-Treasurer.

The Association acted unanimously and favorably on a proposal by Dr. Dan Scott that $500.00 be contributed by the Association to the Insurance Medical Scientist Scholarship Fund.

Edward Hard, M.D.