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Underwriting News

somewhat
different

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Red Cell Distribution Width

The red cell distribution width (RDW) is a measure of red blood cell size variability. It is calculated routinely by the machines that perform complete blood counts (CBCs). Thus, it is regularly obtained on virtually all CBCs. The values are increased in conditions that modify the shape of the red blood cells. These may include hematologic and non-hematologic conditions. Unfortunately measurement of the RDW is not possible in insurance blood profiles due to delays in processing and its effect on the red cell size, but it is readily available in most medical records.

An elevated RDW is associated with an increase in all-cause mortality in general population screening. In addition, an increase in the RDW is a marker for increased death rates in a variety of clinical conditions including: acute myocardial infarction, chronic stable angina, congestive heart failure (CHF), percutaneous aortic valve replacement and diabetes. There is an associated increase in mortality due to cardiovascular disease, cancer, and chronic lung disease, but not external causes of death such as trauma. Overall, there is a 1.14 increase in relative risk per 1% rise in RDW level, which begins even in the normal range. Rising levels over time are associated with increased death rates, with the greatest mortality risk in those with an above normal and increasing RDW value.

This risk gradient holds true even when controlling for a variety of possible confounding factors including: ethnicity, build, socioeconomic status, physical activity, cardiovascular risk factors (blood pressure, lipids, smoking), nutritional status (iron levels,

vitamin B12, folate, albumin), and a variety of medical conditions (CAD, diabetes, CHF, renal disease, cancer, stroke, lung disease).

The relationship of an increased RDW with mortality is seen in both men and women, in the middle and older ages and regardless of whether anemia is present. In fact, the relative risk is greater when anemia is not present.

The link between RDW and mortality is not entirely understood. In cases where there is an association with a hematologic condition, the risk is likely due to the underlying condition. The current theories are that the measure may be an indicator of inflammation or oxidative stress. Of interest, an increase in RDW is associated with a rise in B-natriuretic peptide levels.

Underwriting guidance on RDW was recently added to the Ascent manual. The guidelines are based on the above noted data and apply debits when the RDW is greater than the usual upper limit of normal (15%), provided that the sample was obtained within two years. Ratings increase as the values increase. However, if the blood sample is older than two years, the advice is to consult with the medical director before applying debits because risk drivers may have changed. When multiple values are available, the suggestion is to average the readings but pay attention to trends. If the RDW is steadily rising, then the action is to rate from the most recent value. If the recent readings are consistently normal, consider not applying debits.

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