Microalbumin

CPT Code 82043/82570
Sample Type Urine
Order Code C919
Tube Type Yellow Top

Increased levels of microalbumin may identify:
• Metabolic syndrome/diabetes
• Kidney disease
• Cardiovascular disease

Microalbumin levels can be reduced by:
• Lowering blood pressure
• Lowering blood sugar levels

Description
Microalbumin is the quantification of small amounts of albumin, a serum protein, in urine that can be used to identify microvascular endothelial dysfunction. The presence of small amounts of albumin in the urine may suggest the presence of systemic endothelial dysfunction - an early indicator of heart disease. This test is more sensitive than a standard dipstick test routinely performed in an office setting.

Clinical Use
Microalbumin may be performed on individuals with type 1 or type 2 diabetes, hypertension, a family history of chronic kidney disease, those at intermediate (10-20%) risk for CVD or those with known vascular disease.

Clinical Significance
• Renal Significance: The American Diabetes Association has defined microalbuminuria as a microalbumin value of 30-300 mg/g creatinine. A persistent microalbumin of >30 mg/g indicates a loss of kidney function and is used in the diagnosis of chronic kidney disease.

• Cardiovascular Significance: Increases in microalbumin excretion in the ‘normal’ range (<30 mg/g) are associated with increased risk for development of cardiovascular morbidity and mortality, as well as all-cause mortality.

• In particular, it was shown that healthy individuals (defined as non-hypertensive, non-diabetic, and without prevalent CVD) with low microalbumin levels had approximately 3x greater risk for developing cardiovascular disease. These levels were gender-specific and noted to be ≥3.9 mg/g for men and ≥7.5 mg/g for women.

• A direct, linear relationship exists between microalbuminuria and the risk of heart attack, stroke and death.

Testing Frequency
The frequency of testing is determined by an individual’s medical history, but may be monitored more frequently in diabetic or hypertensive individuals.

Sample Type
Microalbumin should be performed on a urine sample.

Commercial Insurance or Medicare Coverage
Coverage guidelines, also known as NCD (National Coverage Determination) or LCD (Local Coverage Determination) have been established or posted by CMS (Medicare & Medicaid). Guidelines should be reviewed for coverage and limitations. Limited information has been provided by the majority of the larger carriers (Aetna, United HealthCare, Cigna, Blues).

Understanding Medical Necessity
The following ICD-10 codes for microalbumin are listed as a convenience for the ordering physician. The ordering physician should report the diagnosis code that best describes the reason for performing the test.

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Diagnosis Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2 Diabetes Mellitus with Hyperglycemia</td>
<td>E11.65</td>
</tr>
<tr>
<td>Type 2 Diabetes Mellitus without Complications</td>
<td>E11.9</td>
</tr>
<tr>
<td>Other Specified Diabetes Mellitus without Complications</td>
<td>E13.9</td>
</tr>
<tr>
<td>Pure Hypercholesterolemia, Unspecified</td>
<td>E78.00</td>
</tr>
<tr>
<td>Familial Hypercholesterolemia</td>
<td>E78.01</td>
</tr>
<tr>
<td>Mixed Hyperlipidemia</td>
<td>E78.2</td>
</tr>
<tr>
<td>Other Hyperlipidemia</td>
<td>E78.4</td>
</tr>
<tr>
<td>Hyperlipidemia, Unspecified</td>
<td>E78.5</td>
</tr>
<tr>
<td>Hyperuricemia without Signs of Inflammatory Arthritis and Tophaceous Disease</td>
<td>E79.0</td>
</tr>
<tr>
<td>Essential (primary) Hypertension</td>
<td>I10</td>
</tr>
<tr>
<td>Atherosclerotic Heart Disease of Native Coronary Artery without Angina Pectoris</td>
<td>I25.10</td>
</tr>
</tbody>
</table>
Treatment Considerations

These treatment considerations are for educational purposes only. Specific treatment plans should be provided and reviewed by the treating practitioner.

✓ Assess blood pressure.
  • If not at goal, consider initiating, or titrating, anti-hypertensive therapy.
  NOTE: An elevated blood pressure may damage the endothelium in the kidney and contribute to disease. The presence of microalbuminuria may suggest systemic endothelial dysfunction and the presence of CAD.
  • Retest microalbumin levels in 2-3 months.

✓ Assess the presence of CAD with imaging techniques such as CIMT or coronary artery calcium scoring.
  • Consider aspirin therapy if not contraindicated.
  • Consider clopidogrel if history of CAD (i.e., myocardial infarction or revascularization) and/or cerebrovascular disease (i.e., TIA or stroke).

✓ Assess risk for pre-diabetes/diabetes.
  • If abnormal fasting glucose or oral glucose tolerance test, consider PPAR agonists, metformin or DPP-IV inhibitors if not contraindicated.

References