Multiple Myeloma Minimal Residual Disease Detection by Flow Cytometry

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Multiple myeloma (MM) is a rare cancer of plasma cells (white blood cells) that begins in the bone marrow. Abnormal plasma cells begin to multiply out of control until these cells constitute the majority of the cells in the bone marrow and form tumors within bone leading to pain and an increased risk of fracture. Patients undergoing treatment for MM will be tested for evidence of remaining malignant cells to help determine the effectiveness of therapy and to aid in prognosis.

Featured ARUP Testing

Multiple Myeloma Minimum Residual Disease by Flow Cytometry 3002069

Method: Flow Cytometry

- Aids in monitoring therapy in individuals with an established diagnosis of MM or plasma cell dyscrasia (PCD)
- Use for detection of minimal residual disease (MRD) in patients after treatment for MM/PCD
- Not appropriate for initial diagnosis of MM

Test Interpretation

Clinical Sensitivity

Limit of detection: 0.001%

- Sensitivity is dependent on number of events and may be lower in some samples, particularly hypocellular or hemodilute samples

Results

Aberrant or monoclonal plasma cells: detected or not detected.

- Aberrant plasma cells will be reported as percentage of total events
- Marker expression on aberrant plasma cells will be reported at positive or negative

Limitations

- Poor cell viability may adversely affect antigens and impede the ability to properly identify neoplastic cells
- Number of events collected may affect sensitivity
- Does not assess for aberrant myeloid cells/blasts or T-cell or B-cell lymphoid disorders, including monoclonal B-cells
- Flow results should not be used alone to diagnose malignancy
  - Should be interpreted in conjunction with morphology, clinical information, and other necessary ancillary tests for a definitive diagnosis

Related Information

Plasma Cell Dyscrasias
Plasma Cell Dyscrasias Testing Algorithm