The IRMMa model (Individual Risk Prediction for Patients with Multiple Myeloma) leverages advanced machine learning to consider the specific gene mutations in the myeloma tumor genome. Existing models provide average outcome probabilities, but IRMMa seeks to determine where an individual patient falls within those probabilities. The model uses a large collaborative database to analyze different treatment outcomes based on a patient's biological and genomic makeup.

The goal is to predict the best treatment options for patients based on their specific profiles, potentially replacing the current approach of grouping all patients together.

This model is publicly available as a research tool and not yet used in clinical practice.

For more information on IRMMa, visit: https://news.med.miami.edu/ash-landgren-multiple-myeloma/

AI can also be used to analyze biopsies and predict outcomes, similar to how ChatGPT functions but specialized for myeloma.

**EMERGING MULTIPLE MYELOMA THERAPIES**

- Three new bispecific antibodies, teclistamab (Tecvayli), talquetamab (Talvey), and elranatamab (Elexxfio), have been approved in the field of myeloma in the past 12-18 months. These have shown 60-80% response rates in those living with myeloma who have been heavily pretreated.
- New CAR T-cell therapies, such as ide-cel (Abecma) and cilta-cel (Carvykti), have also been approved and target BCMA.
- There are ongoing trials combining these drugs with others like daratumumab (Darzalex), lenalidomide (Revlimid), or pomalidomide (Pomalyst).
- New targets for CAR T-cell therapies are being explored, such as GPRC5D, along with dual-targeted cell therapies and allogeneic (off-the-shelf) CAR T-cell therapies.
- Belantamab mafodotin (Blenrep), an antibody-drug conjugate targeting BCMA, has shown promise in combination therapies after initial setbacks.

**CAR T-CELL THERAPIES ARE STILL BEING STUDIED FOR RELAPSED MYELOMA BUT SHOWS PROMISE.**

- Studies have allowed patients to undergo treatment with either CAR T-cell therapy or bispecific antibodies after prior exposure to the other modality.
- Immunotherapy
- Time may be an important factor in sequencing treatments; going back to back from one therapy to the other is less likely to be beneficial compared to switching to another therapy in between.

**MANAGING AND MONITORING MYELOMA**

- Monitoring after induction therapy for myeloma patients varies by center, with a focus on maintaining good long-term clinical outcomes and quality of life.
- Testing frequency and timing are personalized to minimize intrusiveness.
- Maintenance therapy with lenalidomide is common, and new approaches combining it with daratumumab are being explored.
- Annual imaging and bone marrow biopsies may be recommended in conjunction with regular blood tests.

**UTILIZATION OF ARTIFICIAL INTELLIGENCE IN MYELOMA**

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