

Novel therapies in the treatment of Multiple Myeloma

Progress in the treatment of myeloma is continuing and several anti-myeloma drugs are in development.

Bendamustine (Treanda®): a chemotherapy agent already used in the treatment of other haematological malignancies. It is administered intravenously and is being trialed in relapsed and/or refractory myeloma.

Carfilzomib (Kyprolis®) → a second generation proteasome inhibitor, administered intravenously. In the first year it is given twice a week for 3 weeks consecutively followed by a 1 week pause, and afterwards bi-weekly. It has been tested as a single agent treatment with steroids, but also in combination with other anti-myeloma drugs.

Daratumumab (Darzalex®): anti CD38 monoclonal antibody given intravenously over several hours. This drug is being trialed as a single agent as well as in combination with other anti-myeloma drugs in both newly diagnosed and relapsed and/or refractory disease.

Elotuzumab (Empliciti™) → a monoclonal antibody that activates immune system cells (Natural Killer cells) to fight myeloma cells by destroying them directly and making them more recognisable to NK cells. It is effective as a single agent therapy and is also used in combination with other anti-myeloma drugs.

Ixazomib (Nilaro®): an oral proteasome inhibitor. It has been trialed as a single agent as well as in combination with other anti-myeloma drugs in both newly diagnosed and relapsed and/or refractory disease. Optimal dosage is once weekly, continuing until disease progression.

Marizomib (NPI-0052): a proteasome inhibitor regulating cell function and growth. The drug is given as an intravenous infusion, and being evaluated in patients whose disease no longer responds to Velcade.

Melflufen: is a peptidase-potentiated therapy designed for targeted delivery of alkylating moieties to tumor cells. It is given intravenously and is being investigated in relapsed/ refractory myeloma.

Panobinstat (Farydak®): a non-selective histone deacetylase inhibitor (pan-HDAC inhibitor) given orally in days 1, 3, 5, 8 10 and 12 of a 3 week cycle (with one rest week). It is currently used in combination with other anti-myeloma drugs for relapsed and / or refractory disease.

Pelareorep (Reolysin®): a type of oncolytic virus. Administration is intravenous over 1 hour, however the optimal number of doses is under investigation in early phase clinical trials.

Plitidepsin (Aplidin®): is marine-derived antitumor agent being evaluated in combination with dexamethasone in a trials. The drug has shown synergistic effects with other anti-myeloma drugs – it is given via intravenous infusion every 2 weeks.

Selinexor (KPT-330): this is a new family of drugs known as Selective Inhibitor of Nuclear Export (SINE™) compounds, which works by blocking the action of a protein (XPO1 – responsible for protein movement within the cell) within the nucleus of myeloma cells. This oral drug is currently being tested in Phase I trials.

Venetoclax (Venclyxto™): a pro-survival inhibitor which works by accelerating cancer cell death. This is an oral drug being investigated as a daily treatment either alone or in combination with other anti-myeloma drugs.

Sources: Myeloma UK, Multiple Myeloma Research Foundation – Information correct October 2017

Whilst every attempt has been made to provide the most up-to-date information, new therapeutic developments are continually evolving. The following resources and websites can provide further information regarding the latest in drug development and clinical trials:

www.clinicaltrials.gov

www.centrewatch.com

www.cancerresearchuk.org

www.cancer.net

www.ciscrp.org (Centre for Information and Study on Clinical Research Participation)

app.who.int/trialsearch/Default.aspx (WHO International Clinical Trials Registry Platform)

Patient advocacy groups may also provide up-to-date information:

www.myeloma.org

www.multiplemyeloma.org