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IMPACT OF CHANGE IN MOBILSATION METHOD ON ADEQUACY OF STEM CELL COLLECTION IN MULTIPLE MYELOMA PATIENTS-SINGLE CENTRE EXPERIENCE

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INTRODUCTION

Despite the emergence of many new treatments, high dose Melphalan and autologous stem cell transplantation (ASCT) remains the standard of care for younger patients with Multiple Myeloma (MM). Effective ASCT is dependent on an adequate collection of haematopoietic stem cells (HSC) from the patient, usually by peripheral stem cell harvest.

In broad terms, the two main mobilisation strategies are using growth factors alone(Granulocyte-colony stimulating factors, (G-CSF), or growth factors in combination with chemotherapy (Chemo-mobilisation).

In addition, chemokine receptor antagonists (Plerixafor) can be used to improve the efficacy of mobilisation by both methods.

AIM

Effective mobilisation of HSC from the bone marrow in to peripheral blood is a critical initial step for the success of an autologous SCT for multiple myeloma.

Both chemo-mobilization and chemo -free mobilization startegies are known to have differing advantages and disadvantages.

Chemo-mobilisation may increase adequacy compared to GCSF alone, but is known to increase toxicity.

In our centre, a decision was made to move from a preference of stem cell mobilisation with cyclophosphamide and GCSF, to GCSF alone in most cases.

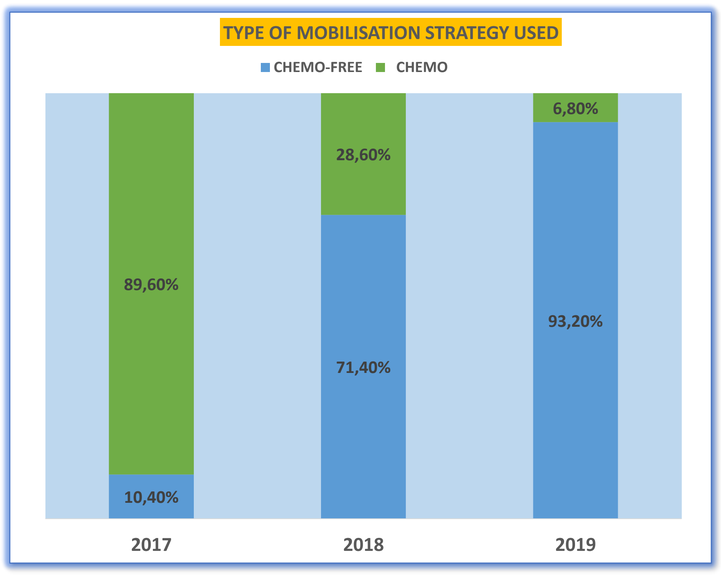
This study evaluates the impact of this change on overall rates of stem cell collection adequacy.

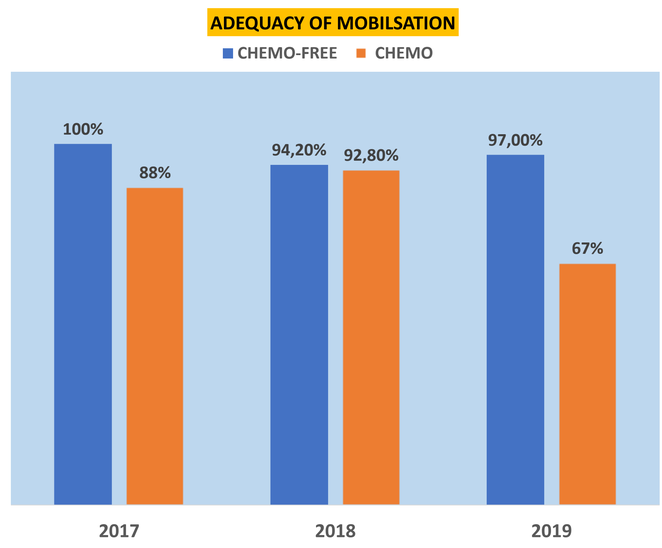
RESULTS

During the 2017–2019 period a total of 141 Myeloma patients underwent HSC collection (2017, n = 48, 2018, n = 49, 2019, n = 44).

The change in centre mobilisation policy led to marked differences in the rates of chemo-free vs chemo-mobiliation (2017=10.4% vs 89.6%; 2018 = 71.4% vs 28.6% ;2019–93.2% vs 6.8%).

Rates of adequacy of collection were not significantly different when comparing the two mobilisation regimes , chemo-freemobiliza tion vs chemo-mobilisation (2017–100% vs 88 %, 2018–94 % vs 92%, 2019–97% vs 67%)





METHODS

In 2017, considering limited inpatient bed resources, a decision was made to increase the number of patients receiving chemo-free mobilisation,in order to reduce the need for day-unit spaces in our haematology department for chemoadministration and reduce chemotherapy induced toxicity in our patients.

The impact of this policy change on adequacy of stem cell harvest was then evaluated for the subsequent two years.

An adequate collection is considered to be a harvest of a minimum of $2X10^9$ CD34+ cells/kg for a single ASCT and a least 4 $X10^9$ CD34+ cells/kg for two ASCTs.

Mobilization failure is usually defined as the inability to procure $2X10^9$CD34+ cells/kg despite 3 apheresis sessions

CONCLUSIONS

In conclusion, in our single centre experience, a switch to a preference for chemo-free mobilisation can be undertaken without impact on adequacy of stem cell collection.

This could lead to savings in the need for day unit capcity and reduce inconvenience for the patients.

Further evaluation of the impact on inpatient admissions with sepsis following chemo-mobilisation versus chemo-free should be undertaken .

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