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Use of Pegylated Interferon in Myeloproliferative Neoplasms: Are Patients Maintained on Less Frequent Dosing than Once Weekly?

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INTRODUCTION

Pegylated interferon (peginterferon) is commonly used as a cytoreductive agent for myeloproliferative neoplasms (MPN). This indication is unlicensed and at the time of the audit, only funded for patients intolerant of standard short-acting interferon-alfa.

Anecdotally at NUH, pegylated interferon has been administered less frequently than once weekly

AIM

The aim of the analysis was to establish:

- Indication for use and whether in line with commissioning policy
- Starting dose
- Discontinuation rate and reason for stopping

A secondary aim was to establish the proportion of patients dosed less frequently than once weekly.

METHOD

Single-centre, retrospective analysis of case notes. Patients were identified through pharmacy dispensing records.

The original dataset captured patients between Feb 2017 & Nov 2018 and was later expanded to include patients initiated on peginterferon between Nov 2018 & Dec 2019. Patients were excluded if they did not have a diagnosis of MPN.

RESULTS

N= 33 patients (age range 21 – 87 years). Chart 1 shows the % of pts by disease subtype.
92% of PV pts carried the JAK-2 V617F mutation. 39% of ET pts were CAL-R mutated and 39% JAK-2 V617F mutated.

Peginterferon was initiated in 45% (15) of patients following intolerance to standard short-acting interferon. Figure 1 shows indication for use.

36% (12) patients discontinued peginterferon. The most common reasons for discontinuation were toxicity relating to thyroid function (n=3) or a new malignancy requiring chemotherapy (n=3).

Most patients (67%) were initiated on a starting dose of 90 micrograms weekly, with 18%, 6% and 9% started on 45, 135 and 180 micrograms once weekly respectively.

Once stabilised, nearly half (45%) of patients required less frequent dosing, with a minimum interval of fortnightly injections (range 2 to 6 weeks) see chart 2.

Chart 1: MPN subtype

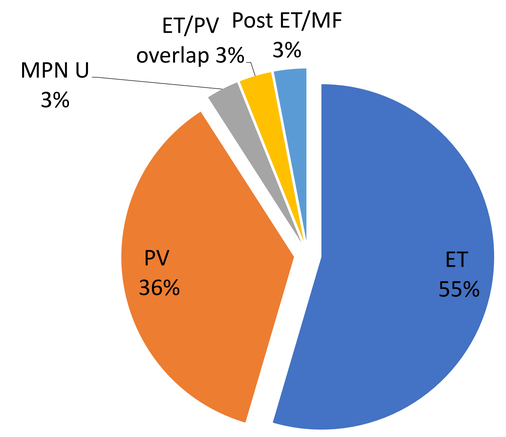
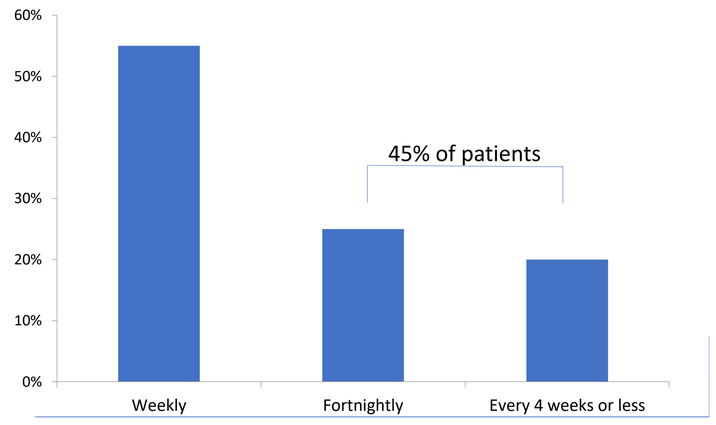


Figure 1: Indication	% pts
Intolerant of interferon	45%
Predicted non-tolerance of interferon	12%
Treatment failure	16%
Withdrawal of standard interferon	9%
Not documented	8%
Intolerance - other	4%

Chart 2: Frequency of peginterferon administration



CONCLUSIONS

Historically, pegylated interferon has been reserved for patients intolerant to standard interferon-alfa due to the lack of comparative data between peginterferon and standard therapy. However, recent phase 3 data have shown peginterferon to be equivalent to hydroxycarbamide.[2] In addition, since the original analysis was started, Roche Products Limited have discontinued manufacture of Roferon A ®.

Nearly 50% of patients required dosing every two weeks or less. Based on NUH prices, compared to a standard interferon-alfa dose of 3 million units three times a week, peginterferon therapy at this reduced frequency is cheaper. Less frequent administration of peginterferon may mitigate the cost of introducing this agent first-line, where hydroxycarbamide is not indicated.

REFERENCES

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2. Mascarenhas J Kosiorek HE, Prchal JT et al. Blood 2018 132:577

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