Recommendations for the use of Tall Man Lettering for systemic anti-cancer treatments (SACT) in the United Kingdom

A guide for members on the use of Tall Man Lettering in the UK

British Oncology Pharmacy Association

Version 1.0

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Contents

1. Background

1.1 General

1.1.1 Look-Alike-Sound-Alike (LASA) medicines pose a risk throughout medicine (1). With Systemic Anti-Cancer Therapies (SACT), these risks may be greater due to the narrow therapeutic index of the medicines involved.

1.1.2 TALLman lettering has been proposed as a mitigation to reduce the risk of physical product selection errors and selection errors on IT systems (2). TALLman lettering places letters within the medicine name in uppercase letters, with the aim of highlighting the difference between two similar words. There is no universal system for application of TALLman lettering, and there is no regulatory requirement in the UK for its use at all.

1.1.3 The British Oncology Pharmacy Association considers that judicious use of TALLman lettering is likely to help mitigate risk. However, there is a concern that excessive use may result in a form of 'alert-fatigue' (3). Additionally, adoption of different styles of TALLman lettering such as tALLman or tallMAN may dilute the effectiveness.

1.2 Current Recognised TALLman lists

1.2.1 The US Food and Drug Administration (FDA) has produced a relatively short list of medicines that it mandates the use of TALLman lettering for (4). This list has been developed based on case reports of drug selection errors within the US, combined with other factors.

1.2.2 The Institute for Safe Medication Practices (ISMP) has also produced an additional list of medicines that it recommends are considered for TALLman lettering (5). This again has been produced from case reports of actual selection errors from the ISMP's international members. The ISMP list includes brand name similarities. Different brand names are sometimes used internationally, and within the UK where relatively few medicines are prescribed by brand the relevance may be less clear.

1.2.3 The National Comprehensive Cancer Network (NCCN) have produced a list for Tall Man Lettering (6). This is based on the Unified Medical Language System and FDA/ISMP lists. There is no documented method for TALL man lettering in this list and therefore has not been included in this document.

2. Method of creating TALLman

2.1.1 There is a paucity of published data to support the selection of the most safe and effective system for TALLman lettering. However, a study conducted by Loughborough University (7), on behalf of Connecting for Health (a former NHS body that aimed to deliver best practice in Information Technology (IT) systems), identified that a method they named MID tallman produced the least selection errors during an IT based system of analysis.

2.1.2 Gerret et al state that MID tallman was created by "working from the first letter of the medicine name take each common character to the *right until two or more characters are different, and from that point on capitalise the characters*" and then "*working from the last letter of the word take each capitalized common character to the left until two or*

more characters are different, and change the capital letters to that point back to lowercase."

2.1.3 They also compared a method that they describe as CD3 tallman, which was created by *""working from the first letter of the medicine name take each common character to the right until two or more characters are different, and from that point on capitalise the characters. The letter 'i' is excluded and is always in lowercase"* and *"working from the last letter of the word take each capitalized common character to the left until two or more characters are different, continue until there are potentially three characters in uppercase and change the capital letters to that point back to lowercase. The letter 'i' is excluded and is always in lowercase."* They compared both these methods to 'wild type' tallman (the format commonly found – which has been derived without explanation) and unformatted text*."*

2.1.4 By way of contrast, Table 1 shows three common chemotherapy pairs with each of these methods applied.

Table 1 Comparison of different methods of TALLman lettering for common chemotherapy treatments

WildType	MID	CD3
CISplatin	cISplatin	ciSplatin
CARBOplatin	cARBOplatin	cARBoplatin
DOXOrubicin	dOXorubicin	dOXorubicin
DAUNOrubicin	dAUNorubicin	dAUNorubicin
vinCRIStine	vinCRIstine	vinCRistine
vinBLAStine	vinBLAstine	vinBLAstine

2.1.5 ISMP states that they used the same CD3 rule. However, they state that "*when application of this rule fails to lead to the best tall man lettering option (e.g., makes names appear too similar, makes names hard to read based on pronunciation), an alternative option is considered*" (5). As can be seen from Table 1, there are a number of situations where ISMP chooses not to follow its own rule. This inconsistency is problematic if individual organisations wish to implement a rule on a new medicine before ISMP has done so.

2.1.6 Liaising with third party suppliers may be needed to implement TallMan lettering.

3. Application to classifications of medicines

3.1.1 There is no evidence that all medicines in the same therapeutic class should automatically have TALLman lettering applied. It is possible that doing so may actually cause an increase in risks. For instance, the FDA list requires TALLman lettering for doxorubicin and daunorubicin, but does not suggest it for the other anthracyclines – epirubicin and idarubicin. The ISMP list has identified that epirubicin and eribulin may represent a risk of selection error. Therefore, applying TALLman lettering to EPIrubicin may not reduce the risk of confusion with eribulin. Instead epiRUBicin and eriBULin are the recommended formats. Likewise, oxaliplatin has not been recommended for tallman lettering on either list, despite cisplatin and carboplatin being listed.

3.1.2 Increasing numbers of SACT treatments have the same suffixes –mab and –ib, simply applying TALLman to all medicines with these suffixes is likely to produce so many TALLman names that it may no longer be helpful to highlight those products most prone to LASA errors.

4. Editorial Style

4.1.1 TALLman lettering may make some text more difficult to read. It is likely to only be beneficial in places where transcription and drug selection take place. Therefore, in a body of text describing the use of a medicine (e.g. a drug protocol), unless both medicines are being described, there is unlikely to be any advantage from the use of TALLman lettering. However, on prescriptions, drug labels, pharmacy worksheets, document names and protocol summary tables the use of TALLman is likely to be beneficial.

4.1.2 Generic medicines should normally be written with a lower case first letter. Branded medicines should normally be written with an upper case first letter.

4.1.3 For examples see Appendix 1.

5. Recommendations

5.1 BOPA recommends:

5.1.1 Unless there is a regulatory accepted format of application of TALLman lettering for a specific medicine (e.g. a MHRA licensed product with a specific approved labelling) for new medicines – the MID method of TALLman should be adopted where necessary.

5.1.2 For medicines already on the FDA and ISMP lists, their formats should be used to promote consistency.

5.1.3 TALLman should only be applied to those medicines where there is an evidence base for LASA errors – either through case reports or a scientifically reproducible method of determining potential risk.

5.1.4 All new medicines should be considered for LASA risks at the time of their introduction, and throughout their use. LASA errors should be reported through national error reporting systems.

5.1.5 Unless there is good reason to do so (e.g. for differentiation of biological brands with biosimilars), prescribing should be generic. Where a brand needs to be specified, it should be accompanied by the generic name.

5.1.6 Bold font or inversion of the background and foreground colour may be used IN ADDITION to the use of upper case letters, but not instead of upper case letters.

5.2 The list of SACT which BOPA recommends to have TALLman lettering applied, based on the products identified by the FDA and ISMP is given in Table 2.

5.3 ISMP states they use CD3 Tall Man but with human review, therefore many of their drugs do not follow the CD3 rule.

5.4 TALLman lettering is also appropriate for use on other medicines that may be administered alongside SACT (e.g. LORazepam, raNITIdine, OLANZapine, valACYclovir, valGANciclovir) but this is not included in this document.

Table 2 List of SACT which should have TALLman lettering applied.

Drug Name (From FDA / ISMP List)	FDA List	ISMP List	BOPA List
aza**CITID**ine		✔	✔
CARBOplatin		✔	✔
CISplatin		✔	✔
DAUNOrubicin	✔		✔
DOCEtaxel		✔	✔
DOXOrubicin	✔		✔
epi**RUB**icin		✔	✔
eri**BUL**in		✔	✔
IDArubicin		✔	✔
leucovorin[1] (or calcium folinate)		✔	✔
leucovorin[1] (or sodium folinate)		✔	✔
LEVOleucovorin[1] (or calcium **LEVO**-folinate)		✔	✔
LEVOleucovorin[1] (or sodium **LEVO**-folinate)		✔	✔
medroxy**PROGESTER**one	✔		✔
methyl**PREDNIS**olone	✔		✔
mito**MY**cin		✔	✔
mito**XANTRONE**	✔		✔
PACLitaxel		✔	✔
PAZOPanib		✔	✔
PEMEtrexed		✔	✔
PONATinib		✔	✔
prednisoLONE[2]	✔		✔
ri**TUX**imab		✔	✔
SORAfenib		✔	✔
SUNItinib		✔	✔
vin**BLAS**tine	✔		✔
vin**CRIS**tine	✔		✔

[1] ISMP List identifies levoleucovorin and leucovorin as a drug name of confusion. In the UK this would normally be prescribed as calcium or sodium folinate

[2] The identified risk for prednisolone is with prednisone. Prednisone is not licensed in the UK, and therefore the risk and need for prednisolone *may not* warrant the use of TALLman lettering in the UK.

6. References

1. Bryan R, Aronson JK, Williams A, Jordan S. The problem of look-alike, sound-alike name errors: Drivers and solutions. Br J Clin Pharmacol. 2021 Feb;87(2):386–94.
2. Larmené-Beld KHM, Alting EK, Taxis K. A systematic literature review on strategies to avoid look-alike errors of labels. Eur J Clin Pharmacol. 2018 Aug;74(8):985–93.
3. Backman R, Bayliss S, Moore D, Litchfield I. Clinical reminder alert fatigue in healthcare: a systematic literature review protocol using qualitative evidence. Syst Rev. 2017 Dec;6(1):255.
4. FDA Name Differentiation Project | FDA [Internet]. [cited 2022 Jan 7]. Available from: https://www.fda.gov/drugs/medication-errors-related-cder-regulated-drug-products/fda-name-differentiation-project
5. Look-Alike Drug Names with Recommended Tall Man Letters | Institute For Safe Medication Practices [Internet]. [cited 2022 Jan 7]. Available from: https://www.ismp.org/recommendations/tall-man-letters-list
6. National Comprehensive Cancer Network (NCCN) Chemotherapy Order Templates 2017. Appendix G: Tall man lettering. https://www.nccn.org/docs/default-source/clinical/order-templates/tall_man_lettering.pdf?sfvrsn=b6085042_2
7. Gerret, David, Gale, Alastair, Darker, Iain, Filik, Ruth, Purdy, Kevin. The Use of Tall Man Lettering to Minimise Selection Errors of Medicine Names in Computer Prescribing and Dispensing Systems [Internet]. Loughborough University Enterprises Ltd.; 2009 [cited 2022 Jan 7]. Available from: https://www.webarchive.org.uk/wayback/archive/20130408165141/http://www.connectingforhealth.nhs.uk/systemsandservices/eprescribing/safety

7. Document control

Title	Recommendations of the use of Tall Man Lettering for systemic anti-cancer treatments (SACT) in the United Kingdom
Authors / Editors version 1.0	Calum Polwart, Specialist Pharmacist - Oncology, South Tees NHS Foundation Trust. Netty Cracknell, Lead Cancer Pharmacist, Ramsay Health Care UK. Matt Greening, Deputy Head of Technical Services and Lead PN Pharmacist, Project Lead 'Just Do It', Royal Cornwall Hospital Trust. Marcus Warner, EHR Specialist - Beacon (Cancer), Guy's & St Thomas' NHS Foundation Trust.
Owner	BOPA.

Change History

Draft	Date	Lead Author/Editor	Summary of Change
1.0	1st February 2022	Calcum Polwart / Netty Cracknell	New document

Proposed Target Audience	BOPA members Members of the UK Chemotherapy Board Chief Pharmacists National procurement leads NHS England Specialised Commissioning Cancer Pharmacists Organisation Heads of IT Organisation CIOs Organisation Heads of Chemotherapy/SACT Services
Contact details	contact@bopa.org.uk

8. Appendix 1: Examples of good editorial style for the use of TALLman lettering

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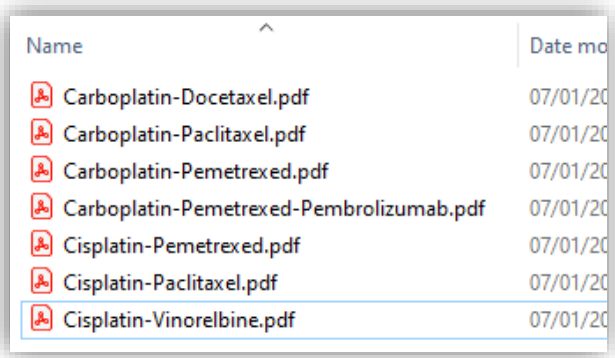
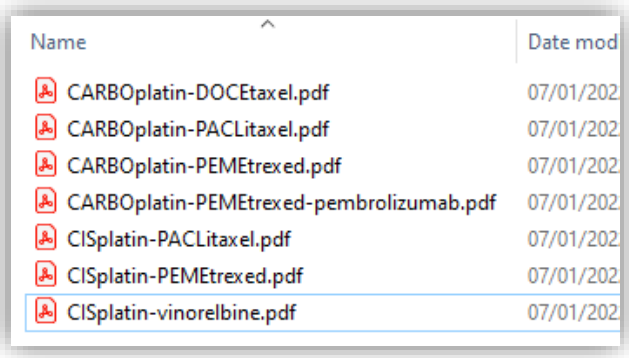
<tr><td>File names:</td><td> 
</td><td> 
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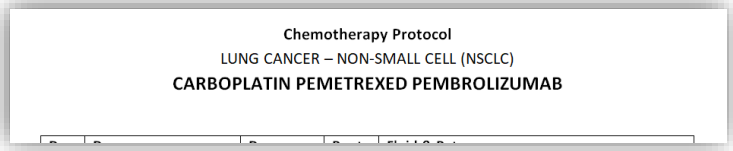
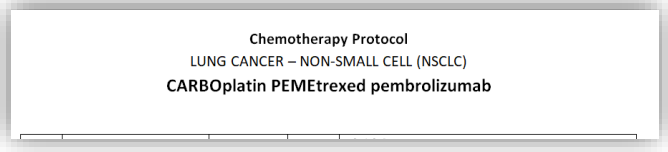
<tr><td>Document Titles:</td><td> 
</td><td> 
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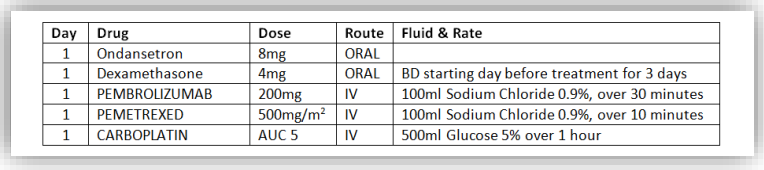
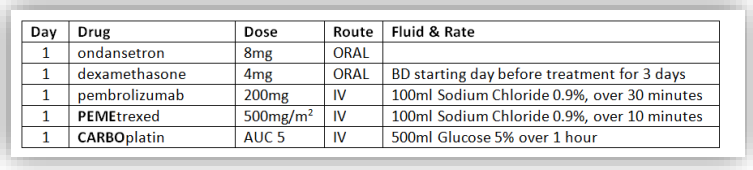
<tr><td>Drug Dosing Tables:</td><td> 
</td><td> 
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<tr><td colspan="3">Using TALLman lettering on regime summary tables can highlight the risk of selection error when checking and transcribing details. Avoid using all capitals for specific meanings like ‘chemotherapy’ drug.</td></tr>
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Prescriptions:

Day	Date and Time	Drug and dose (per m2) or dose (per kg)	ACTUAL DOSE	Infusion Fluid and Final Volume	Route	Additives
1	01/01/2022 T= hrs	ONDANSETRON (8mg)	8 mg		ORAL	
1	01/01/2022 T= hrs	DEXAMETHASONE (4mg)	4 mg		ORAL	
1	01/01/2022 T= hrs	**PEMBROLIZUMAB** (200mg)	200 mg	Sodium Chloride 0.9% 100ml	IV	
1	01/01/2022 T= hrs	**PEMETREXED** (500mg/m²)	900 mg	Sodium Chloride 0.9% 100ml	IV	
1	01/01/2022 T= hrs	**CARBOPLATIN** (AUC = 5)	670 mg	Glucose 5% 500ml	IV	

Day	Date and Time	Drug and dose (per m2) or dose (per kg)	ACTUAL DOSE	Infusion Fluid and Final Volume	Route	Additives
1	01/01/2022 T= hrs	ondansetron (8mg)	8 mg		ORAL	
1	01/01/2022 T= hrs	dexamethasone (4mg)	4 mg		ORAL	
1	01/01/2022 T= hrs	pembrolizumab (200mg)	200 mg	sodium chloride 0.9% 100ml	IV	
1	01/01/2022 T= hrs	**PEME**trexed (500mg/m²)	900 mg	sodium chloride 0.9% 100ml	IV	
1	01/01/2022 T= hrs	**CARBO**platin (AUC = 5)	670 mg	glucose 5% 500ml	IV	

Using TALLman lettering on prescriptions should highlight the need to check drug selection matches the product being supplied or administered.

Body Text in Protocols:

Notes:

Vitamin B12 should be administered in the week preceding the 1st cycle and every 9 weeks thereafter while on **PEME**trexed. Folic acid 400micrograms once daily during treatment starting least five days before the first dose of **PEME**trexed, and continuing until 21 days after the last dose of **PEME**trexed.

Non-steroidal anti-inflammatory drugs: These should be avoided from 5 days before each dose of **PEME**trexed until 2 days after each dose. If concomitant administration of NSAIDs is necessary, patients should be monitored closely for toxicity, especially myelosuppression, renal impairment and gastrointestinal toxicity.

Notes:

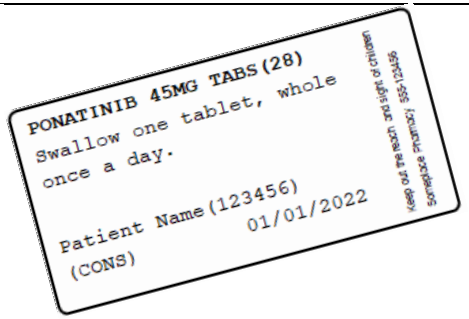
Vitamin B12 should be administered in the week preceding the 1st cycle and every 9 weeks thereafter while on pemetrexed. Folic acid 400 micrograms once daily during treatment starting least five days before the first dose of pemetrexed, and continuing until 21 days after the last dose of pemetrexed.

Non-steroidal anti-inflammatory drugs: These should be avoided from 5 days before each dose of pemetrexed until 2 days after each dose. If concomitant administration of NSAIDs is necessary, patients should be monitored closely for toxicity, especially myelosuppression, renal impairment and gastrointestinal toxicity.

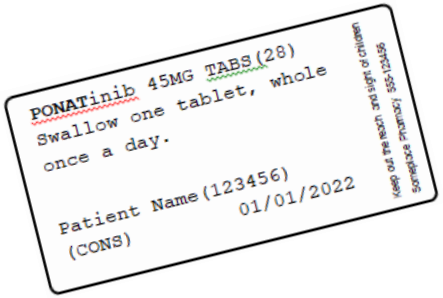
There is no need to use TALLman in the body of text unless two confusable drug names are being described in the same text. Use of TALLman in this context is likely to make text less readable.

Product Labels:

CARBOPLATIN 670MG
in Glucose 5%. Total volume: 500ml
For intra-venous infusion
over 60 minutes
Use before: 23:59 02/01/2022
Store in the fridge
Patient Name – Hospital No



CARBOplatin **670mg**
in Glucose 5%. Total volume: 500ml
For intra-venous infusion
over 60 minutes
Use before: 23:59 02/01/2022
Store in the fridge
Patient Name – Hospital No



Consistent used of TALLman on prescriptions and product labels should aid checking.