NHS
Kent and Medway
Cancer Collaborative

Guidelines for Bevacizumab Induced Hypertension

Network Guidance Document

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1.0 OVERVIEW

Bevacizumab may cause hypertension in patients that are treated with the drug. This is due to the mechanism of action of bevacizumab and its affects on the vascular endothelial growth factor signalling pathway and angiogenesis.

An increased incidence of hypertension (all grades) of up to 34% was observed in bevacizumab-treated patients in clinical trials compared with up to 14% in those treated with comparator. Grade 3 and 4 hypertension (requiring oral anti-hypertensive medicines) in patients receiving bevacizumab ranged from 0.4% to 17.9%. Grade 4 hypertension (hypertensive crisis) occurred in up to 1.0% of patients treated with bevacizumab and chemotherapy compared to up to 0.2% of patients treated with the same chemotherapy alone.

Clinical safety data suggest that the incidence of hypertension is likely to be dose-dependent.

Pre-existing hypertension should be adequately controlled before starting treatment with bevacizumab.

2.0 MANAGEMENT OF BEVACIZUMAB INDUCED HYPERTENSION

Hypertension is generally adequately controlled with oral anti-hypertensives such as angiotensin-converting enzyme (ACE) inhibitors, diuretics and calcium-channel blockers. However, if patients are to receive a cisplatin containing chemotherapy regime, then the use of diuretics is not recommended for managing hypertension.

Key steps for management:

1. Conduct and document a formal risk assessment for potential cardiovascular complications before treatment with bevacizumab is initiated. This should include standardised blood pressure measurements – at least two separate sessions.
2. Recognise that pre-existing hypertension will be common in cancer patients and should be identified and addressed before treatment with bevacizumab is initiated.
3. Actively monitor blood pressure throughout treatment with more frequent assessments during the first cycle.
4. The goal for hypertension control is a target blood pressure of <140/90 mmHg. However, if a patient has additional risk factors e.g. diabetes, chronic kidney disease, or is at high risk of cardiovascular disease, and then a target blood pressure of less than 130/80 mmHg may be appropriate.
5. Manage blood pressure elevations to avoid the development of complications associated with excessive/prolonged elevations. Seek advice from Cardiology colleagues if necessary.
6. If medically significant hypertension cannot be controlled with antihypertensive therapy, or if the patient develops hypertensive crisis or hypertensive encephalopathy, bevacizumab should be permanently discontinued.

2.1 Duration of Treatment

The hypertensive effects of bevacizumab should dissipate when bevacizumab is discontinued. Ensure that blood pressure is monitored closely on discontinuation of treatment and that the doses of any prescribed antihypertensive drugs are monitored and reduced as appropriate.

2.2 Summary

Assess cardiac risk factors prior to initiation of treatment including BP measurements

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Actively monitor BP throughout treatment especially during cycle one

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Target BP is <140/90 mmHg unless other risk factors (e.g. diabetes) then target BP is 130/80 mmHg

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Refer patient to GP for assessment and treatment.

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If hypertension is not controllable then treatment with bevacizumab may need to be interrupted.

If a patient develops hypertension that cannot be controlled to consistently < 180/110mmgHg, bevacizumab should be withheld and the patient referred to a hypertension specialist.

3.0 REFERENCES

- Avastin® Summary of Product Characteristics accessed online 3rd May 2011. Last updated 04/04/2011
- Maitland ML et al. Initial Assessment, Surveillance, and Management of Blood Pressure in Patients Receiving Vascular Endothelial Growth Factor Signaling Pathway Inhibitors. J Natl Cancer Inst 2010; 102: 596–604
- Miles D et al. Using bevacizumab to treat metastatic cancer: UK consensus guidelines. British Journal of Hospital Medicine, December 2010, Vol 71, No 12.

4.0 DOCUMENT ADMINISTRATION

Document Title	Guidelines for Bevacizumab Induced Hypertension
Principal author	Kate Miller
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The document is located http://www.kmcc.nhs.uk/medicines-and-prescribing-incorporating-sact-pathways/sact-pathways-guidelines-for-the-management-of-sact-induced-adverse-reactions-and-nursing/	
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Revision History

Date of revision	New Version Number	Nature of Revision	Summary of Changes
July 2011	0.1	K Miller/ Colorectal NOG	Published
October 2011	1	K Miller/ Colorectal NOG	Published
November 2013			Reviewed by Colorectal NOG – no changes.
September 2020	1.1	Reviewed at Gynae NOG Changes agreed	Amendment to BP parameter as WHO guidance has been revised. Remove treatment options, prescribed by either GP or Cardiology. Remove table of recommended treatment.
March 2021	2	Approved by R. Jyothirmayi Reformatted by R.Patel	Published