Ashford and St. Peter's Hospitals
NHS Foundation Trust

DDAVP Response Test for children >2yrs old

Author: Dr Claire Mitchell – Paediatric Consultant

Supported by: Dr Jayanthi Alamelu – Paediatric Haematology Consultant
Evelina Children's Hospital

Contact details: claire.mitchell15@nhs.net

Guideline History		
Date	**Comments**	**Approved By**
Feb 2020	First created	
March 2025	Updated to compliment the Evelina Children's Hospital guideline – no significant changes	Paediatric Guidelines Committee

DDAVP Response Test for children >2years old

Introduction

If a sufficient response is reflected in blood samples during the response test, DDAVP can be effectively used as cover for patients with mild and moderate FVIII deficiency, von Willebrand's Disease, and platelet function defects whilst having selective surgical procedures or in the event of a bleeding episode, removing the need for factor concentrates or plasma-derived products.[1]

Background

Desmopressin (DDAVP) is a synthetic equivalent of 'vasopressin' (an antidiuretic hormone naturally produced in the body). The use of DDAVP stimulates a release of natural stores in the body resulting in an increase in factor VIII coagulant and von Willebrand's factor (VWF).

Scope

The scope of this document is to describe the response test for DDAVP in patients with mild/moderate FVIII deficiency, von Willebrand's Disease, and platelet function defects managed by the Paediatric Service.

Advantages and limitations of treatment

Advantages	**Limitations**
· The treatment has the ability to produce a substantial rise in FVIII and VWF without the risks of blood borne viruses associated with plasma products. · It is efficient, effective and has a significant cost saving. · It can be easily taught to parents/caregivers to administer at home either prophylactically or in bleeding circumstances when required.	· Ineffectiveness in some sub-groups of von Willebrand's Disease (type 2B, type 3 and cautious use in type 2N) · Potential side effects for specific patients · Adverse effects in children under two years of age (i.e. seizures) · Contraindications for patients with cardiac disease and for conditions being treated with diuretics (risk of hyponatraemia), in pregnancy (oxytocic effect)/ breast feeding.

These factors need to be considered when prescribing the drug, and reflect why a DDAVP response test should be undertaken prior to therapeutic use.

Preparation on the day

- Explain the procedure to the patient, including possible mild side effects (facial flushing, tachycardia, hypotension, vasodilation, headaches, increased thirst/fluid retention)

- Fluids should be monitored over following 24 hours, and patient not allowed to drink more than 1litre over following 24-hour period (less if child is young), due to risk of fluid retention

- The patient should be advised to have something to eat before the procedure

- Record all the medication that the patient is currently taking, checking and discussing with the consultant if DDAVP is contraindicated.

- Measure and record patient weight, heart rate, BP, temperature and respiratory rate

- Use topical anaesthetic cream or ethyl chloride spray at injection site to reduce pain from SC injection

Dosing of DDAVP (subcutaneous is preferred route):

Subcutaneous injection:

- The recommended dosage of DDAVP is calculated at 0.3 micrograms per kg (max 15mcg).
- Ensure vial of DDAVP is the 15mcg/ml concentration to reduce volume and thus pain at injection site
- A maximum of 1ml should be injected per injection site
- Prepare the injection in a 1ml or 2ml syringe using a blue (23 gauge) needle to draw up the DDAVP, and attach a short length orange (25 gauge) needle to give injection

Intravenous Infusion:

- The recommended dosage of DDAVP is calculated at 0.3 micrograms per kg.
- DDAVP should be given over 30 minutes, monitor BP every 10 minutes during administration
- DDAVP for IV use is usually prepared in vials of 4 micrograms per ml.
- In Adults age >16 years old: The prescribed dose should be diluted in l00mls of 0.9% sodium chloride.
- In Children between ages of 2-16 years old: The prescribed dose should be diluted in 50 mls of 0.9% sodium chloride.

DDAVP Test process

Insert cannula for bloods to be taken at:
Time = 0, before administration of DDAVP
Time = 60 mins
If giving DDAVP via intravenous route: do not use same cannula for blood tests after DDAVP administration, and do not take blood from same arm as DDAVP administered.

Monitor BP every 15 minutes for 1st hour following DDAVP administration

Von Willebrand Disease

Time = 0	**Time = 60mins**
FBC Factor VIII level vonWillebrand screen (antigen and activity) Collagen binding assay Group & Screen – if not previously performed Renal profile	FBC Factor VIII level vonWillebrand screen (antigen and activity) Collagen binding assay Renal profile

Mild/Moderate Haemophilia A (Factor VIII deficiency)

Time = 0	**Time = 60mins**
FBC Factor VIII level Renal profile	FBC Factor VIII level Renal profile

Platelet Function Defect

Time = 0	**Time**
FBC Platelet function assays Factor VIII level vonWillebrand screen (antigen and activity) Collagen binding assay Renal profile	FBC Platelet function assays Factor VIII level vonWillebrand screen (antigen and activity) Collagen binding assay Renal profile

It's important to label the blood bottles with Time = 0, Time = 60mins

At Discharge

Inform parent/guardian to seek medical attention if patient experiences headache or passes minimal urine.

2. Supporting References

1. Guideline on the selection and use of therapeutic products to treat haemophilia and other hereditary bleeding disorders. A UK Haemophilia Centre Doctor's Organisation (UKHCDO) guideline approved by British Committee for Standards in Haematology. Haemophilia, 14, 671-684 2008.

3. Supporting relevant trust guidelines

2. Guideline Governance

a. Scope

This guideline is relevant to all staff caring for all children from 0-18 years old across the emergency department, inpatient ward and outpatient department.

b. Purpose

i. This guidelines aims to facilitate a common approach to the management of children. At times deviation from the guideline may be necessary, this should be documented and is the responsibility of the attending consultant.

ii. This guideline is subject to regular review to ensure ongoing evidence based practice.

c. Duties and Responsibilities

All healthcare professionals responsible for the care of all children 0-18years should be aware of practice according to this guideline.

d. Approval and Ratification

This guideline will be approved and ratified by the Paediatric Guidelines Group.

e. Dissemination and Implementation

i. This guideline will be uploaded to the trust intranet 'Paediatric Guidelines' page and thus available for common use.
ii. This guideline will be shared as part of ongoing education within the Paediatric Department for both medical and nursing staff.
iii. All members of staff are invited to attend and give comments on the guideline as part of the ratification process.

f. Review and Revision Arrangements

a. This policy will be reviewed on a 3 yearly basis by the appropriate persons.
b. If new information comes to light prior to the review date, an earlier review will be prompted.
c. Amendments to the document shall be clearly marked on the document control sheet and the updated version uploaded to the intranet. Minor amendments will be ratified through the Paediatric Guidelines Group. A minor amendment would consist of no major change in process, and includes but is not limited to, amendments to documents within the appendices.

g. Equality Impact Assessment

Background • Who was involved in the Equality Impact Assessment
Author
Methodology • A brief account of how the likely effects of the policy was assessed (to include race and ethnic origin, disability, gender, culture, religion or belief, sexual orientation, age) • The data sources and any other information used • The consultation that was carried out (who, why and how?)
All groups of staff and patients were taken into consideration and there is no bias towards or against any particular group.
Key Findings • Describe the results of the assessment • Identify if there is adverse or a potentially adverse impacts for any equalities groups
There is no evidence of discrimination.
Conclusion • Provide a summary of the overall conclusions
There is no evidence of discrimination.
Recommendations • State recommended changes to the proposed policy as a result of the impact assessment • Where it has not been possible to amend the policy, provide the detail of any actions that have been identified • Describe the plans for reviewing the assessment
This guideline is appropriate for use.

h. Document Checklist

To be completed (electronically) and attached to any document which guides practice when submitted to the appropriate committee for approval or ratification.

Title of the document: DDAVP Response Test for children >2yrs old
Policy (document) Author: Dr Claire Mitchell
Executive Director: N/A

		Yes/No/ Unsure/NA	Comments
1.	**Title**		
	Is the title clear and unambiguous?	**Y**	
	Is it clear whether the document is a guideline, policy, protocol or standard?	**Y**	
2.	**Scope/Purpose**		
	Is the target population clear and unambiguous?	**Y**	
	Is the purpose of the document clear?	**Y**	
	Are the intended outcomes described?	**Y**	
	Are the statements clear and unambiguous?	**Y**	
3.	**Development Process**		
	Is there evidence of engagement with stakeholders and users?	**N/A**	
	Who was engaged in a review of the document (list committees/ individuals)?		**Paediatric Guidelines Committee**
	Has the policy template been followed (i.e. is the format correct)?	**Y**	
4.	**Evidence Base**		
	Is the type of evidence to support the document identified explicitly?	**Y**	
	Are local/organisational supporting documents referenced?	**Y**	

		Yes/No/ Unsure/NA	Comments
5.	**Approval**		
	Does the document identify which committee/group will approve/ratify it?	**Y**	
	If appropriate, have the joint human resources/staff side committee (or equivalent) approved the document?	**N/A**	
6.	**Dissemination and Implementation**		
	Is there an outline/plan to identify how this will be done?	**Y**	
	Does the plan include the necessary training/support to ensure compliance?	**Y**	
7.	**Process for Monitoring Compliance**		
	Are there measurable standards or KPIs to support monitoring compliance of the document?	**N**	
8.	**Review Date**		
	Is the review date identified and is this acceptable?	**Y**	
9.	**Overall Responsibility for the Document**		
	Is it clear who will be responsible for coordinating the dissemination, implementation and review of the documentation?	**Y**	
10.	**Equality Impact Assessment (EIA)**		
	Has a suitable EIA been completed?	Y	

Committee Approval (Paediatric Guidelines Group)			
If the committee is happy to approve this document, please complete the section below, date it and return it to the Policy (document) Owner			
Name of Chair	**Alexandra Jones**	**Date**	**16/4/2025**
Ratification by Management Executive (if appropriate)			
If the Management Executive is happy to ratify this document, please complete the date of ratification below and advise the Policy (document) Owner			
Date: n/a			