GLOUCESTERSHIRE HOSPITALS INTRAVENOUS AMINOPHYLLINE CHART (ADULTS)

DRUG AND FOOD ALLERGIES AND SIGNIFICANT ALERTS			
DATE	DRUG/FOOD	REACTION DETAILS	SIG
	(If NIL KNOWN tick here, & date & sig) ☐		
	To be completed by nurse/prescriber/ward nurse/ pharmacy staff		

Surname ______________________________

Other Names ______________ Hosp No. __________

Address______________________ G.P. ___________

______________________ D.O.B.___________

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DATE		WEIGHT (kg)		HEIGHT (cm)	

The Following MUST be completed:

Consultant	Speciality	Ward/Dept

CONTRAINDICATIONS

- Hypersensitivity to the ethylenediamine
- Allergy to the theophyllines, caffeine or theobromine
- Concomitant use of other xanthine drugs
- Acute porphyria.

PROCEED WITH CAUTION AND MONITOR FOR TOXICITY

- Age > 55 years
- Heart failure
- Liver disease
- See summary of product characteristics (SmPC) for full list

IDEAL BODY WEIGHT CALCULATION

Ideal body weight should be used for all obese patients (BMI >30kg/m^2)

Male: 50kg + (2.3 x height in inches over 5 feet) **or** 50kg + (0.91 × [height in centimetres − 152.4]) = ______kg

Female: 45.5kg + (2.3 x height in inches over 5 feet) **or** 45.5kg + (0.91 × [height in centimetres − 152.4]) = ______kg

PRESCRIBING GUIDE

Due to high pH preferably give via a central venous access device. If this is unavailable, administer via a large peripheral vein.

Loading dose	All patients not already taking oral aminophylline/theophylline should receive a loading dose of 5mg/kg (use ideal body weight if BMI >30kg/m^2), up to a maximum of 500mg.
Maintenance dose	>55 years old or heart failure: 0.3mg/kg/hour <55 years old non-smokers: 0.5mg/kg/hour <55 years old current smokers: 0.7mg/kg/hour
Monitoring	• Plasma levels should be kept between 10-20mg/L (lower levels may be accepted if clinically effective) • The level should be taken 6 hours after beginning IV maintenance therapy if a loading dose is used and after 24 hours if not. Repeat levels should be taken every 24 hours thereafter at a minimum • Dose adjustments should be made as follows: New rate = 15 x current infusion rate (mL/hr)/current level (mg/L)

Prescribe aminophylline here:

LOADING DOSE if acute adverse effects occur, slow the rate or stop the infusion for 5-10 minutes

DATE	TIME	APPROVED NAME	DOSE	FLUID	ROUTE	ADMINISTRATION INSTRUCTIONS	SIGN/ BLEEP	GIVEN BY/ TIME
		AMINOPHYLLINE	mg	100mL sodium chloride 0.9%	IV	Over 20-30 mins Maximum 25mg/min		

MAINTENANCE DOSE

Note: recommended dilution gives a 1mg/mL strength, therefore the calculated dose in mg/hr equals the rate in mL/hr

DATE	TIME	APPROVED NAME	DOSE	FLUID	ROUTE	RATE	SIGN/ BLEEP	GIVEN BY/ TIME	MONITORING
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)
		AMINOPHYLLINE	1000mg	1 litre sodium chloride 0.9%	IV	mL/hr			Date: Level: (mg/L)

Once completed this chart must be filed in the charts and forms section of the patient's health record

SUPPLEMENTARY SAFETY INFORMATION	
Adverse effects	• Overly rapid IV administration is associated with arrhythmias, seizures and hypotension • Toxicity is associated with the above in addition to severe hypokalaemia, vomiting, restlessness, pupillary dilation and hyperglycaemia
Patient monitoring	• ECG should be obtained prior to administration to assess for arrhythmia and QTc interval prolongation • Heart rate and BP should be assessed at baseline, then every 30 minutes for 2 hours at a minimum. Subsequent monitoring as per NEWS scoring unless otherwise stated by a doctor. • In addition to plasma drug levels daily monitoring of potassium is advised • Aminophylline has a high pH and may cause tissue damage - monitor for infusion site reactions. Resite cannula at first signs of inflammation.

COMMON DRUGS INTERACTING WITH AMINOPHYLLINE	
Drugs which **increase** plasma theophylline levels	Macrolide antibiotics, fluoroquinolone antibiotics, fluconazole, propranolol, oral contraceptives, calcium channel blockers, methotrexate, allopurinol (high doses only).
Drugs which **decrease** plasma theophylline levels	Enzyme inducing anticonvulsants (e.g. carbamazepine, phenytoin, primidone, phenobarbitone), rifampicin, tobacco smoke.
Other notable interactions	• Lithium – aminophylline increases the excretion of lithium and may decrease its therapeutic effectiveness. • Fluoroquinolones – increased risk of convulsions • Beta$_2$-agonists – may potentiate hypokalaemic effect of IV aminophylline increasing arrhythmogenic risk • Beta-blockers – antagonise the bronchodilator effects of aminophylline
Note: the above is not exhaustive and only lists interactions between commonly co-prescribed medications. Please consult the BNF and the product SPC for full details	

CONVERTING TO ORAL THEOPHYLLINE (Uniphyllin Continus®)

1. Calculate the total amount of IV aminophylline administered over 24 hours
2. Multiple this amount by 0.8
3. Divide this amount by 2 to create a BD dosing regimen

For example:
If the IV aminophylline dose is 35mg/hr, then the total daily dose is 840mg. The oral theophylline dose is 840mg x 0.8 = 672mg daily. A suitable theophylline dosing regimen could be Uniphyllin Continus®, 300mg in the morning and 400mg in the evening.