GUIDELINES FOR ADMINISTRATION OF INJECTABLE ARTESUNATE FOR SEVERE MALARIA

WHO RECOMMENDED TREATMENT [2]



Artesunate powder 60mg | Bicarbonate ampoule | Saline solution *

PRODUCT DESCRIPTION [1]

Dose: For children < 20 kg: 3.0 mg/kg
For children > 20 kg and adults: 2.4 mg/kg

Can be given by intravenous route (IV) or intramuscular route (IM).
IV is the preferred route of administration.
Please refer to the patient information leaflet for more information.

*** Water for injection is not an appropriate dilutant**

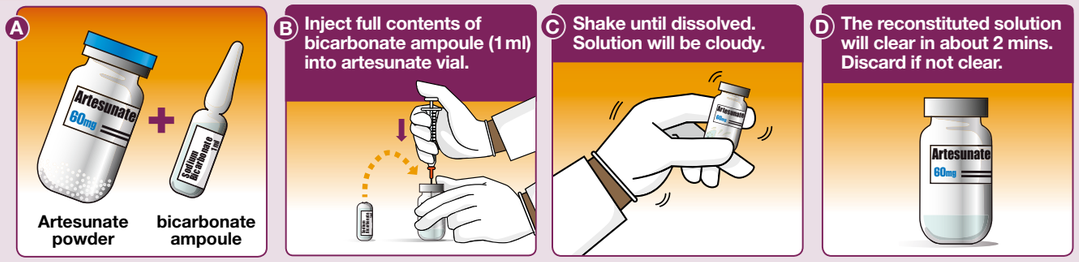
1 WEIGH THE PATIENT

2 DETERMINE THE NUMBER OF VIALS NEEDED

Weight	less than 25 kg	26-50 kg	51-75 kg	76-100 kg
60 mg vial	1	2	3	4

3 RECONSTITUTE

- Activate the drug: artesunate powder + bicarbonate ampoule (immediately before use)



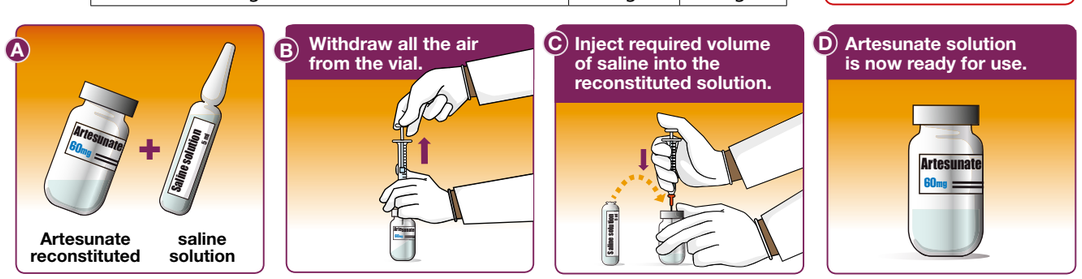
4 DILUTE

- Reconstituted artesunate + saline solution (or dextrose 5%)
- Volume for dilution

	IV	IM
Bicarbonate solution volume	1 ml	1 ml
Saline solution volume	5 ml	2 ml
Total volume	**6 ml**	**3 ml**
Artesunate 60 mg solution concentration	10 mg/ml	20 mg/ml

IMPORTANT

Water for injection is not an appropriate dilutant



1. World Health Organization (WHO) List of Prequalified Medicinal Products (http://apps.who.int/prequal/query/ProductRegistry.aspx?list=ma): artesunate injectable, reference N° MA051, prequalified on 05-Nov-2010.
2. World Health Organization, Management of Severe Malaria - A practical handbook - Third edition - April 2013 - (http://www.who.int/malaria/publications/atoz/9789241548526/en/index.html)

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5 CALCULATE THE DOSE

- Calculate and withdraw the required dose **in ml** according to route of administration:

Less than 20 kg

For intravenous route (IV)	For intramuscular route (IM)
Concentration: 10 mg/ml	**Concentration: 20 mg/ml**
3.0 mg x body weight (kg) / IV artesunate solution concentration 10 mg/ml	3.0 mg x body weight (kg) / IM artesunate solution concentration 20 mg/ml
Round up to the next whole number	Round up to the next whole number
Example:	**Example:**
Dose needed (ml) for 8 kg child: $\frac{3.0 \times 8}{10}$ = 2.4 ml	Dose needed (ml) for 8 kg child: $\frac{3.0 \times 8}{20}$ = 1.2 ml
2.4 ml rounded up to **3 ml**	1.2 ml rounded up to **2 ml**

Weight kg	Dose mg	Dose ml	Weight kg	Dose mg	Dose ml
6 - 7	20	2	6 - 7	20	1
8 - 10	30	3	8 - 10	30	2
11 - 13	40	4	11 - 13	40	2
14 - 16	50	5	14 - 16	50	3
17 - 20	60	6	17 - 20	60	3

More than 20 kg

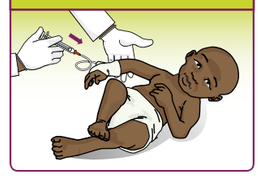
Concentration: 10 mg/ml	Concentration: 20 mg/ml
2.4 mg x body weight (kg) / IV artesunate solution concentration 10 mg/ml	2.4 mg x body weight (kg) / IM artesunate solution concentration 20 mg/ml
Round up to the next whole number	Round up to the next whole number
Example:	**Example:**
Dose needed (ml) for 26 kg child: $\frac{2.4 \times 26}{10}$ = 6.24 ml	Dose needed (ml) for 26 kg child: $\frac{2.4 \times 26}{20}$ = 3.12 ml
6.24 ml rounded up to **7 ml**	3.12 ml rounded up to **4 ml**

Weight kg	Dose mg	Dose ml	Weight kg	Dose mg	Dose ml
20 - 25	60	6	20 - 25	60	3
26 - 29	70	7	26 - 29	70	4
30 - 33	80	8	30 - 33	80	4
34 - 37	90	9	34 - 37	90	5
38 - 41	100	10	38 - 41	100	5
42 - 45	110	11	42 - 45	110	6
46 - 50	120	12	46 - 50	120	6
51 - 54	130	13	51 - 54	130	7
55 - 58	140	14	55 - 58	140	7
59 - 62	150	15	59 - 62	150	8
63 - 66	160	16	63 - 66	160	8
67 - 70	170	17	67 - 70	170	9
71 - 75	180	18	71 - 75	180	9
76 - 79	190	19	76 - 79	190	10
80 - 83	200	20	80 - 83	200	10
84 - 87	210	21	84 - 87	210	11
88 - 91	220	22	88 - 91	220	11
92 - 95	230	23	92 - 95	230	12
96 - 100	240	24	96 - 100	240	12

Remark: the upper limit for each weight band is 0.9 kg e.g. 14 - 16 kg covers 14 - 16.9 kg.

6 ADMINISTER

IV: slow bolus 3-4 ml per minute.



IM: Inject slowly. Spread the doses of more than 2 ml over different sites for babies and 5 ml for adults.



7 DOSING SCHEDULE

1. Give **3 parenteral doses** over 24 hours as indicated in the opposite table

2. Give **parenteral doses** for a minimum of 24 hours once started irrespective of the patients ability to tolerate oral treatment earlier.

- **Day 1** **Dose 1: on admission (0 Hours)**
  Dose 2: 12 hours later
- **Day 2** **Dose 3: 24 hours after first dose**

- When the patient can take oral medication, prescribe a full 3-day course of recommended first line oral Artemisinin Combination Therapy (ACT).
  The first dose of ACT should be taken **between 8 and 12 hours** after the last injection of artesunate.
- Until the patient is able to take oral medication, continue parenteral treatment (one dose a day) **for a maximum of 7 days**.
- A course of injectable artesunate should always be followed by a 3-day course of ACT.

- Evaluate the patient's progress regularly.

IMPORTANT

- **Prepare a fresh solution for each administration.**
- **Discard any unused solution after use.**

This document is intended to demonstrate to health workers how to prepare and administer injectable artesunate, a treatment for severe malaria. It is not intended to provide personal medical advice. The responsibility for the interpretation and use of this material lies with the reader. In no event shall MMV be liable for damages arising from its use.
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