

# Arginine for the Treatment of Stroke-like Episodes Associated with MELAS Syndrome: Survey in French Hospitals in 2018

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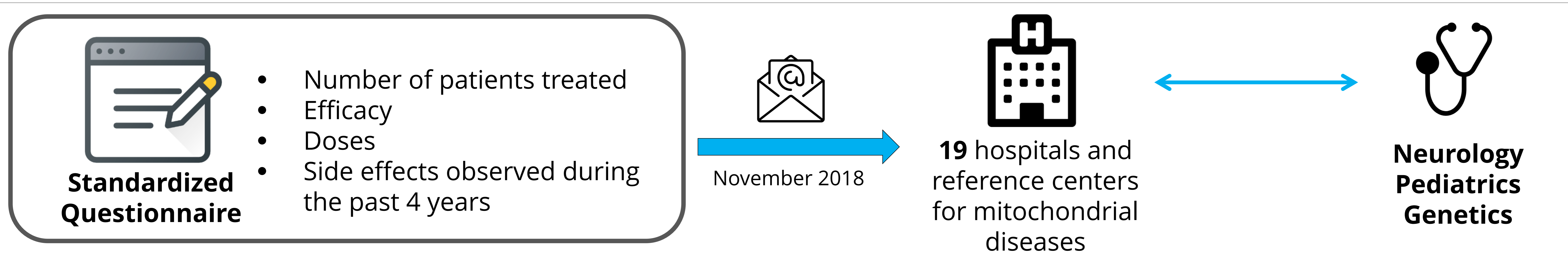
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## Background

- **MELAS (Mitochondrial Encephalomyopathy, Lactic Acidosis and Stroke-like episodes)** = a rare mitochondrial disease
- **Deficiency in NO in cerebral arteries** → impaired vasodilation → multisystemic disorders
- Intravenous arginine supplementation could have a beneficial effect by promoting NO synthesis
- **Arginine 6.25% sol. for infusion (ARG) = hospital preparation** manufactured by Pharmaceutical Establishment of Paris hospitals

**Aim of the study : to assess the use of ARG in MELAS stroke-like episodes in French hospitals**

## Method



## Results and Discussion

Answers received from: **2 hospitals + 5 reference centers = 7 clinicians**

### Number of patients treated / Efficacy

- **Eight** patients treated with ARG for the treatment of MELAS stroke-like episodes between 2015 and 2018:
  - disparition or regression of clinical signs [headache, visual field impairment] (**n=4**)
  - no change after treatment (**n=4**)
- **Literature data: no consensus about arginine efficacy in MELAS stroke-like episodes, but several studies in favor of its use<sup>1,2,3</sup>**

### Safety profile

- **No side effects and no death** were reported following ARG use
  - Good safety profile for ARG use, which is consistent with literature data

### Doses / Combination therapy

**Loading dose**  
500 mg/bw during 3h

**Maintenance dose**  
500 mg/bw during 24h

**5 days** (mean total treatment duration)

Potential arginine transitional resistance due to oxydative stress  
→ short duration of treatment

### Arginine uses:

- monotherapy
- associated with **oral citrulline** or **N-Ac cysteine**

## Conclusion

- According to this survey, ARG was used to treat MELAS stroke-like episodes, but its efficacy is unclear.
- In 2017, the Mitochondrial Medicine Society stated that IV arginine should be administered urgently in MELAS stroke-like episodes<sup>4</sup>.
  - Controlled trials are needed before considering whether arginine is essential in that particular use.