General Anaesthetic Allergy: The experience from a UK tertiary Allergy Centre

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BACKGROUND

Anaphylactic reactions are rare during anaesthesia and estimated to affect between 1 in every 10,000 to 20,000 anaesthetic procedures(1).

The British Society for Allergy and Clinical Immunology (BSACI) have published guidelines describing appropriate management(2).

Patients should be referred to an Allergy Centre which has expertise in investigating such cases and facilities for drug challenges.

We performed a retrospective study to establish frequency of implicated agents, clinical features and causative agents in investigated cases over the last 4 years.

REFERENCES
1. Fisher M, Baldo BA. Anaphylaxis during anaesthesia: current aspects of diagnosis and prevention. Eur J Anaesthesiol 1994; 11:263–84.
2. Ewan PW, Dugué P, Mirakian R, et al. BSACI guidelines for the investigation of suspected anaphylaxis during general anaesthesia. Clin Exp Allergy. 2010;40(1):15-31

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METHOD

The record of allergy challenge tests carried out during the last 4 years (2014-17) was searched in order to audit general anaesthetic testing.
The electronic notes for these patients were then accessed.

Initially the referral letters were analysed for details of the original reaction including the symptoms, implicated drugs and immediate treatment received.

If patients had subsequently tolerated implicated medication, this was also noted.

Results of skin, challenge and IgE tests were recorded along with the advice given to patients.

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RESULTS

A total of 42 patients were investigated for general anaesthetic anaphylaxis from 2014 to 2017.

There were 22 male and 20 female patients. The average age was 52.9 years.

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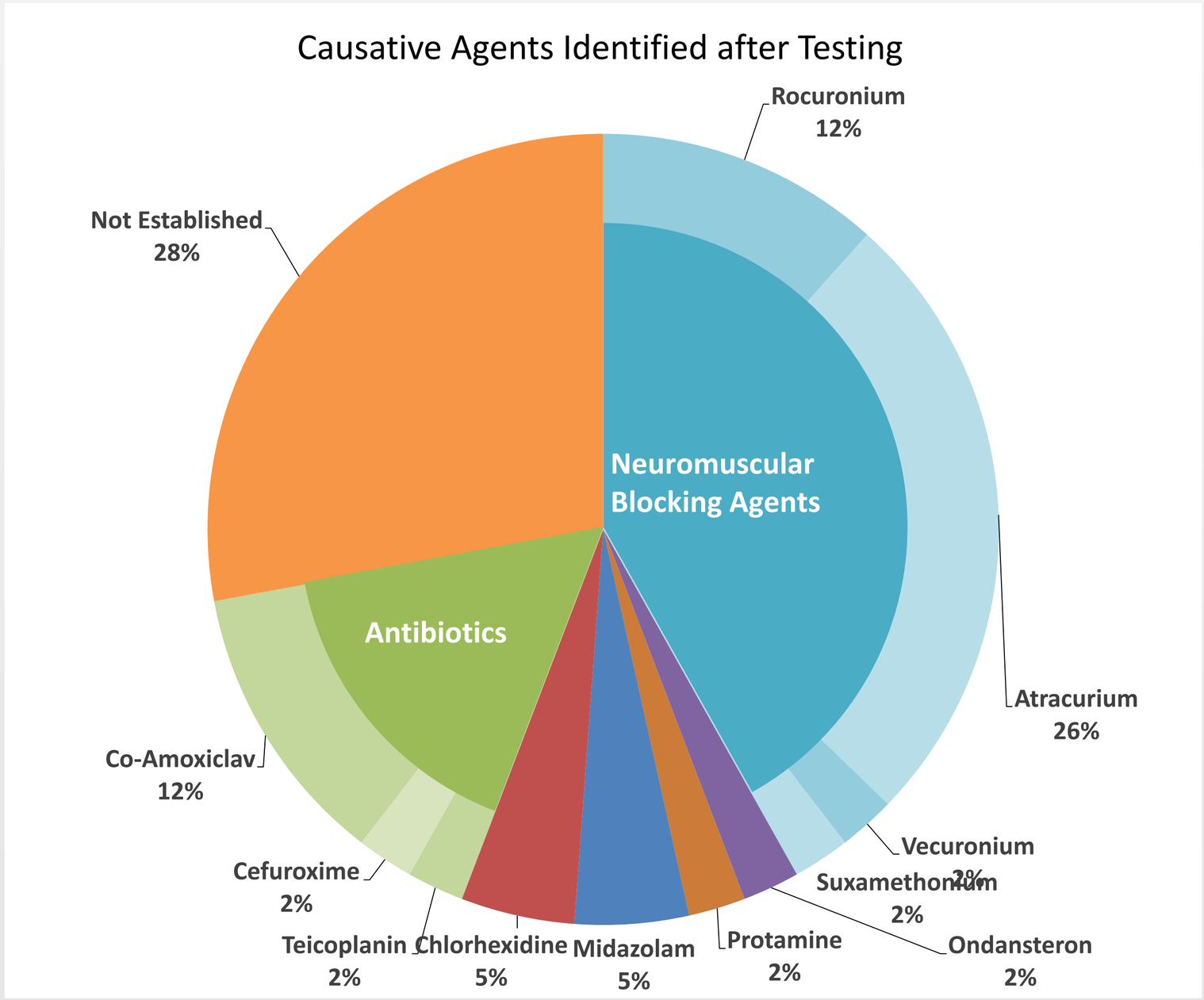

Causative agents were established in 72% of cases investigated.

Neuromuscular blocking agents (NMBA) were responsible for majority of the reactions (42%), followed by antibiotics (16%).

Atracurium was the drug implicated most frequently (11 cases).

This was followed by Rocuronium and Co-Amoxiclav (5 cases each).

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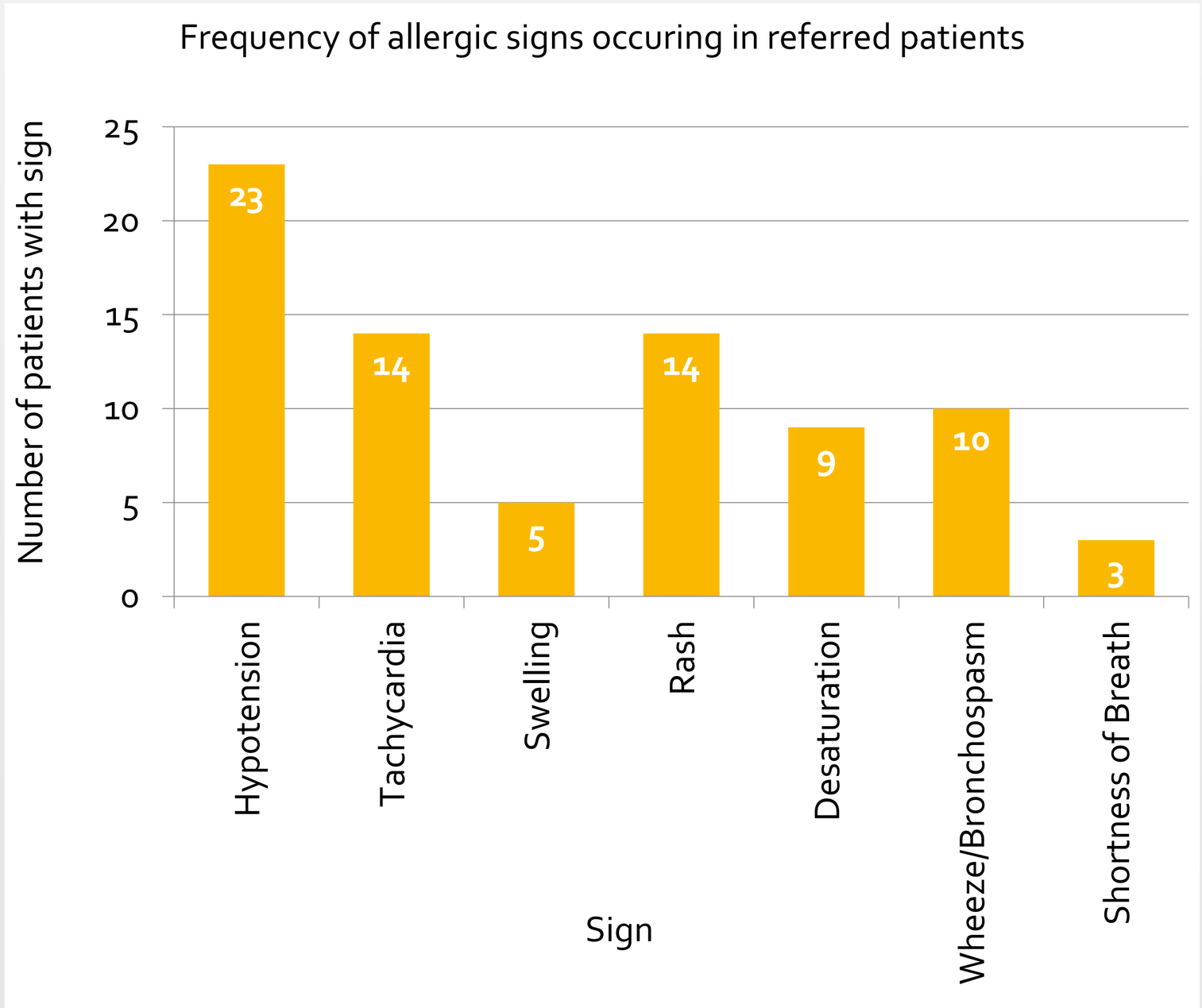

The most common sign was hypotension (23 cases).

Tachycardia was less common (14 cases) and this may be due to concurrent beta-blocker use.

7 patients experienced cardiac arrest.

Swelling was less commonly reported and this could be due to anaphylaxis manifesting without cutaneous features.

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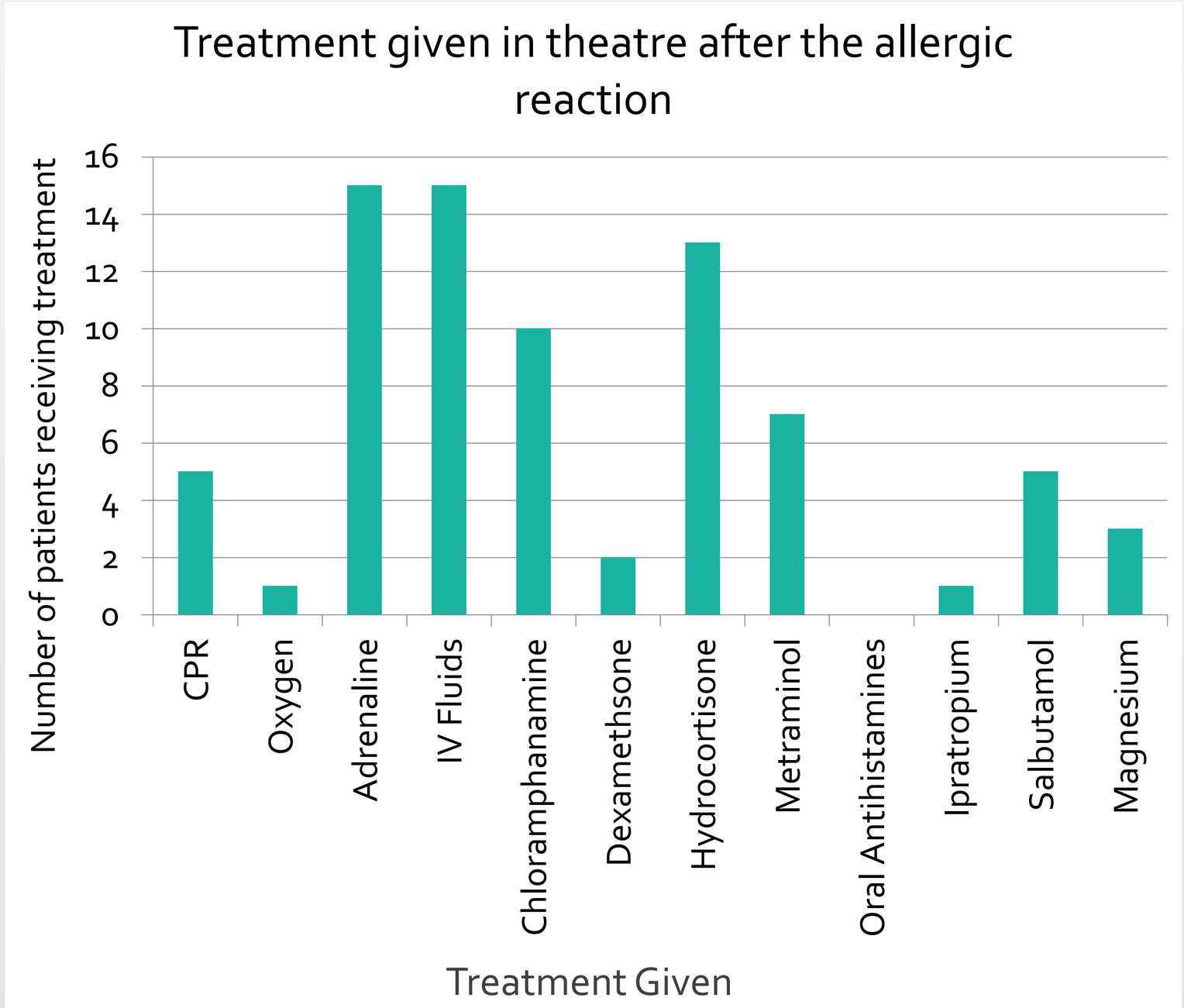

Adrenaline and IV fluids were the most common treatments and were given to 15 patients each.

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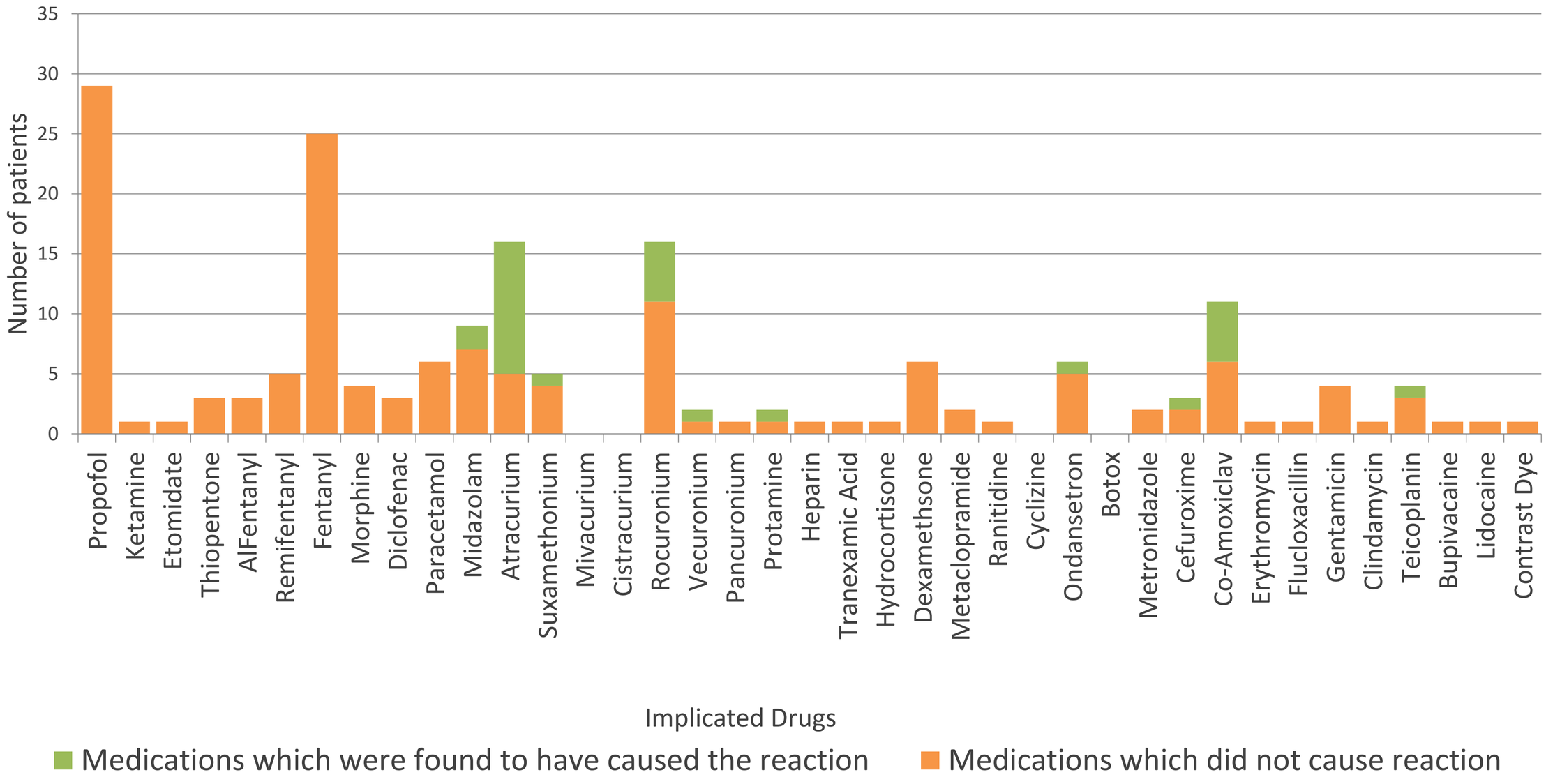
Frequency of medicines administered before reaction including those which were found to be causative



Patients are exposed to a wide range of drugs during surgery. Frequently implicated drugs such as Propofol and Fentanyl were not found to have cause any reaction.

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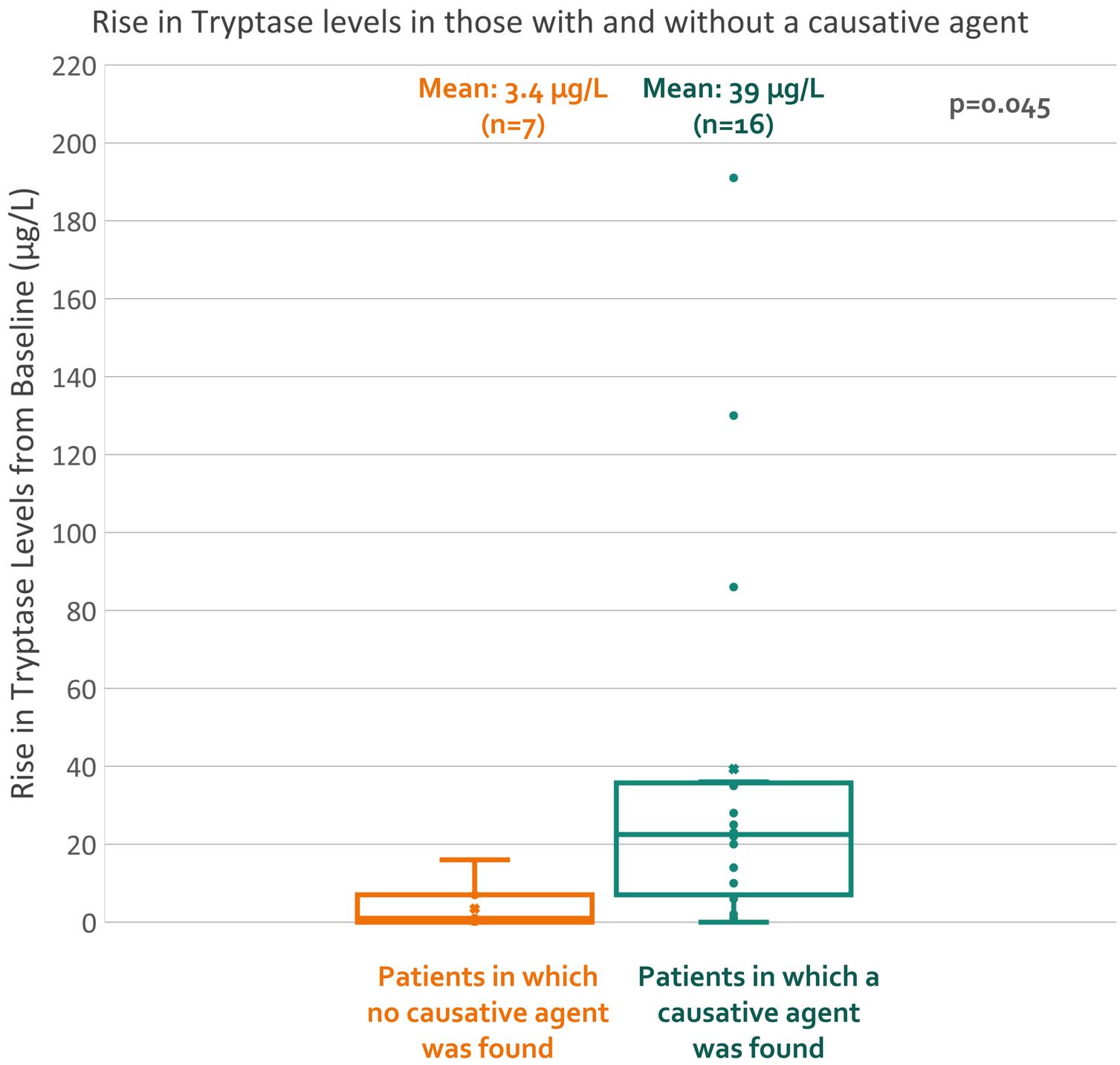

Serial Tryptase measurements were recorded in 23 of 42 patients (54%).

7 (17%) patients had only one tryptase measurement.

The mean tryptase rise in those with a causative agent found was 39 µg/L.

This compares to a mean tryptase rise of 3.4 µg/L in those without a causative agent.

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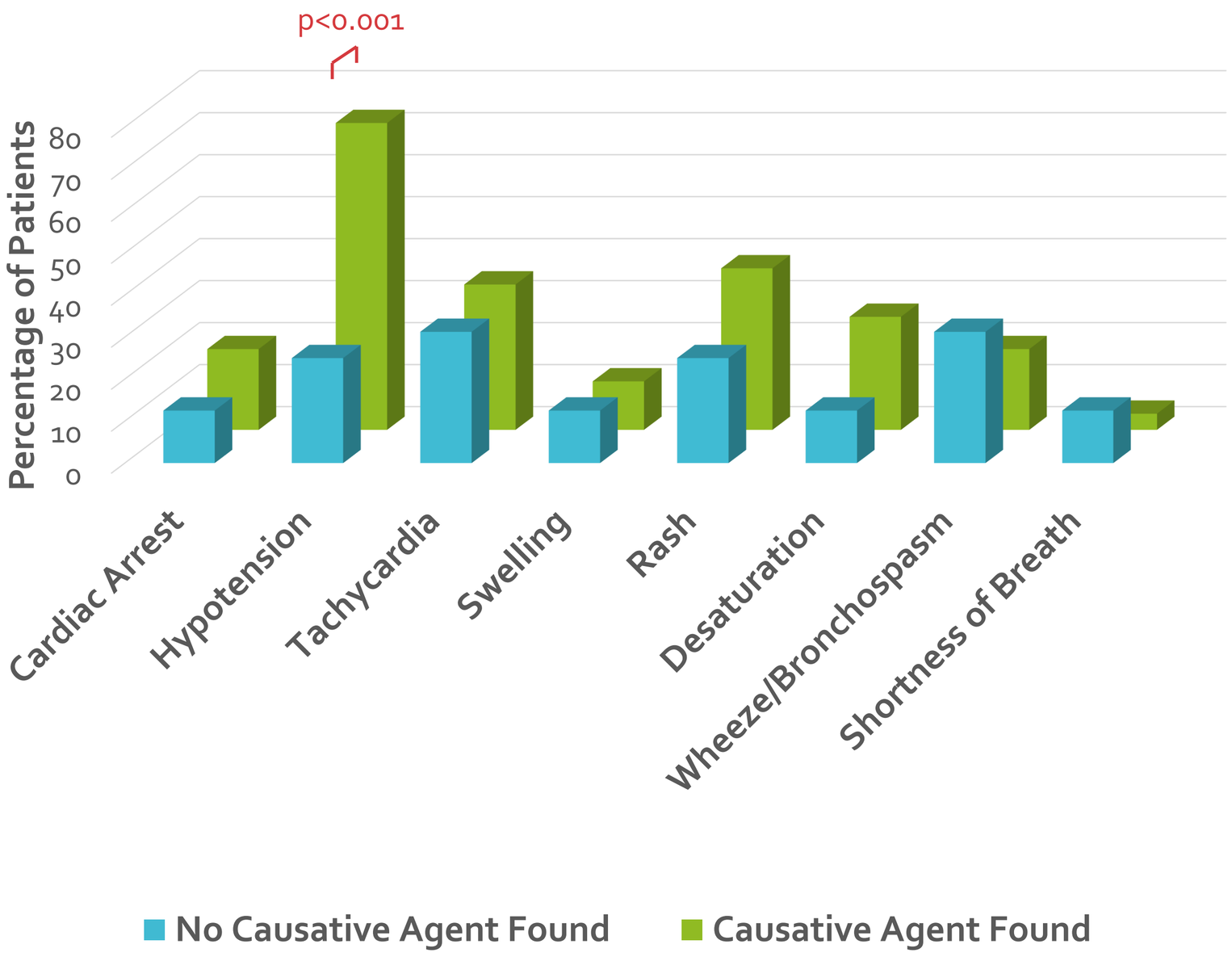
Signs in those with and without a subsequent causative agent



Patients with a causative agent were more likely to have hypotension than those without.

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CONCLUSION

Our findings are broadly consistent with previously published data from other centres. The majority of cases were due to NMBAs, the next biggest group was antibiotics. Many national and international allergy organisations report that a causative agent will not be identifiable in a third of the cases and our data was in agreement with this. It is important for the referring doctors to be aware of this fact. The reasons for negative tests could be poor sensitivity of the tests, inaccurate referral information or the absence of an IgE mediated process. Tryptase analysis may help us determine if an IgE mediated anaphylaxis took place in patients for which no causative agent was found.

The presence of hypotension also appears to predict whether or not a causative agent is found ($p=<0.001$).

It is important that serial tryptase measurements are sent and detailed information of the reaction is made available to allergists to aid in the assessment. We feel that the promotion of these points will lead to a higher detection rate of causative agents.