Background Brugada syndrome (BS) is a genetic disorder characterised by J point elevation in the right ventricular leads, ventricular arrhythmia and sudden cardiac death (SCD). The diagnostic ECG changes can be provoked by sodium channel blocking agents including ajmaline. Although ajmaline testing is well established in adults, there are few data on its safety and outcomes in paediatric cohorts. Here we describe a single centre experience of ajmaline testing for BS in a large cohort of children.

Methods and results 100 consecutive patients aged 18 years or younger who underwent an ajmaline challenge between September 2004 and May 2012 were included. Mean age at the time of ajmaline challenge was 12.6 years (range 2.0–18.4 years), and 54 were male. The indication for ajmaline challenge was a family history of
BS in 49 patients, family history of unexplained sudden cardiac
death (without a confirmed family history of BS) in 40, symptoms
in 9 (syncope/collapse, n=5; chest pain, n=1; palpitations, n=3),
family history of long QT syndrome in 1 patient, and development
of bradycardia with abnormal ECG during general anaesthesia in 1
patient. There were no serious adverse events associated with the
ajmaline tests. A diagnostic type I response was seen in 19 individ-
uals, of which 13 had a family history of BS, 5 had a family
history of SCD without confirmed BS, and 1 patient had syncope
as an indication for the challenge. Although a positive result was
more common in those patients with a family history of BS, this
association did not reach statistical significance. 5 individuals with
a positive ajmaline test underwent electrophysiological studies;
ventricular arrhythmias were not inducible in any. All patients are
alive with no documented ventricular arrhythmias after a median
follow-up time of 3.6 years.

**Conclusions**. Ajmaline provocation testing in children is feasible and
safe when performed in an appropriate setting by an experienced
team. A type I response is more common in patients with a family
history of BS, but the test may be helpful in identifying a diagnosis
in families with unexplained SCD. Overall, BS appears to be asso-
ciated with a very low risk of ventricular arrhythmia in the paed-
iatric population.