# PFO size effect on ischemic neurological events and migraine occurrence

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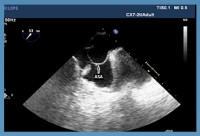
## Background

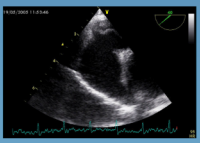
Atrial septum defects (PFO/ASD) are considered a risk factor for cryptogenic stroke and migraine. The goal of this study was to assess PFO size effect on ischemic neurological events and migraine occurrence.

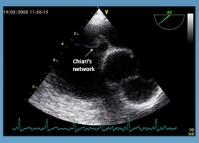
## Methods

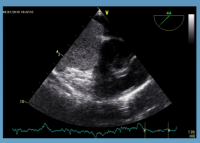
From group of 605 consecutive pts diagnosed due to cryptogenic stroke, TIA or other neurological symptoms in years 2004- 2011 we have selected 365 pts aged <55yrs, without coexisting hypertension and hypercholesterolemia and with PFO (+) presence diagnosed by TEE with contrast (agitated saline).

Pts were divided in 3 groups depending on right to left atrium contrast shunt (small, medium large) in TEE. Small shunt was assessed when only few contrast bubbles crossed IAS, large when massive shunt was observed and medium was a parameter between small and large. We have also assessed Chiarri network and atrial septum aneurysm (ASA) presence.
We have compared groups with small and large shunt and calculated ischemic neurological events occurrence and migraine.





## Results

Data given in %. 0,05 is considered as statistically significant, ns – non significant

| | Small shunt | Large shunt | p |
|---|---|---|---|
| Patients | 93 | 169 | - |
| Age | 33 | 43 | ns |
| Stroke | 18,2 | 19,5 | ns |
| TIA | 22,5 | 21,9 | ns |
| >1 TIA | 4,3 | 22,4 | 0,001 |
| All stroke/TIA | 45,1 | 64,5 | 0,01 |
| Migraine | 64,5 | 57,4 | ns |
| Migraine with aura | 41,9 | 37,3 | ns |
| Migraine attacks/month | 3,8 | 4,5 | 0,06 |
| Duration of pain (h) | 9,0 | 10,1 | ns |
| Intensivity of pain (1-10) | 5,7 | 5,7 | ns |
| Chiarri network | 6,4 | 18,9 | 0,03 |
| ASA | 16,1 | 70,4 | 0,001 |

## Conclusions

Large shunt through PFO more frequently coexisted with ASA and Chiarii network and was related to ischemic neurological event occurrence. Migraine was frequent in both groups but attacks seem to be more frequent in group with large shunt.