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HORMONE REPLACEMENT THERAPY AND RIGHT-TO-LEFT INTRACARDIAC SHUNTS ARE MORE PREVALENT IN POSTMENOPAUSAL WOMEN WITH CRYPTOGENIC STROKE

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## Congenital Cardiology Solutions

### HORMONE REPLACEMENT THERAPY AND RIGHT-TO-LEFT INTRACARDIAC SHUNTS ARE MORE PREVALENT IN POST-MENOPAUSAL WOMEN WITH CRYPTOGENIC STROKE

ACC Moderated Poster Contributions  
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Session Title: Congenital Cardiology Solutions: Adult IV  
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Presentation Number: 1143-398

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**Background:** Hormone replacement therapy (HRT) increases the risk of ischemic stroke in postmenopausal women. The mechanism for this remains unclear. It is also known that HRT increases the risk of venous thrombosis. The presence of right-to-left intracardiac shunt (RLS) through a patent foramen ovale (PFO) may explain the increased risk of stroke in postmenopausal women on HRT via paradoxical embolism.

**Methods:** This study is a retrospective analysis of the UCLA, Mayo Clinic, Tufts, and Scripps-Mercy stroke databases. Medical records of postmenopausal females with ischemic stroke were assessed for stroke risk factors, HRT and RLS. Modified TOAST (Trial of ORG 10172 in Acute Stroke) criteria were used to classify stroke etiology. Those with known shunt and HRT status were included in this analysis. Patients with unknown RLS status were offered to undergo transcranial Doppler for shunt detection. The prevalence of HRT use was compared between patients with and without RLS within the categories of cryptogenic stroke and stroke of known cause.

**Results:**

N= 354 (2251 records reviewed)

Stroke type	Total	Shunt Status	On HRT	P value
Known cause	267	RLS+ 50 (18.7%)	5*	0.13
		RLS- 217 (81.3%)	41	
Cryptogenic	87	RLS+ 55 (63.2%)	16*	0.01
		RLS- 32 (36.8%)	2	

\*Of the 64 women who had a stroke while on HRT, 16/18 (89%) had a PFO in the cryptogenic group compared to 5/46 (11%) in the group with stroke of known cause [p=0.0001].

**Conclusions:** Among the women who were on HRT at the time of the stroke, the presence of a PFO was 8 fold higher in the cryptogenic stroke group compared to the group with stroke of known cause. Among the women with cryptogenic strokes, HRT use was 4.7 times more prevalent in those with PFO compared to those without PFO. These findings support the hypothesis that the presence of a PFO increases the risk of strokes in postmenopausal women who take HRT, presumably via paradoxical embolism.