subsequent reduction of renal blood flow observed during hypothermia are probably unrelated to increased levels of circulating catecholamines or increased renal sympathetic nerve activity. Other metabolic process taking place in response to lowering of temperature have been proposed.⁴

Overall, the clinical evidence regarding the potential benefits of hypothermia during pediatric heart surgery are not convincing. In fact, there is increasing retrospective evidence⁵ showing several benefits of normothermic cardiopulmonary bypass. Our own study has provided the first randomized trial evidence of the impact of normothermic cardiopulmonary bypass on renal function, contributing to the accumulating evidence of this technique in a low-risk group of children undergoing heart surgery.

Much more work is needed if we are to understand whether normothermia is safe in patients at higher risk, such as neonates and patients with complex congenital heart disease, who are more likely to be affected by cardiopulmonary bypass-induced postoperative renal dysfunction.

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RESPIRATORY COMPLICATIONS IN PATIENTS WITH HETEROTAXY SYNDROME

To the Editor:

We read the interesting paper by Swisher and associates¹ on the respiratory complications after cardiac surgery in patients with heterotaxy syndrome. The authors compared the postoperative course of children with heterotaxy syndrome with that of patients with cardiac defects and similar surgical complexities following the Risk Adjustment in Congenital Heart Surgery.^{1,2}

The patients with heterotaxy syndrome showed higher surgical mortality and increased postoperative respiratory complications including postoperative hospital stay, longer mechanical ventilation, need for tracheostomies, and extracorporeal membrane oxygenation support.¹ Other very recent articles underlined specific problems and specific surgical solutions in children with heart disease and laterality defects.^{3,4} All these observations confirm the notion that the presence of genetic syndromes may significantly affect the perioperative management of patients with congenital heart defect.⁵

As described for patients with trisomy 21, deletion 22q11, Turner syndrome, and other genetic syndromes,⁵ the knowledge of specific cardiovascular and extracardiac defects deserves particular attention in the perioperative period in terms of specific diagnostic, operative, and intensive care protocols.

Heterotaxy syndrome characterized by complex cardiovascular malformations and extracardiac defects deserves specific cardiac and extracardiac preoperative assessment to recognize risk factors and to reduce the

operative mortality and postoperative complications.^{1,3,4}

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Reply to the Editor:

We thank Dr Martucci and her colleagues for their supportive letter, which emphasizes the general point that the presence of genetic syndromes may significantly affect the perioperative management of patients with a congenital heart defect. Specifically for patients with heterotaxy, we agree that these complex patients require "cardiac and extracardiac preoperative assessment to recognize risk factors and to reduce the operative mortality and postoperative complications." Extrapolating beyond the phenotype-genotype-prognosis paradigm of their cited reference,¹ we suggest adding "therapy" to the paradigm.