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BPA in dialysis machine components may be toxic to patients' cells

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Levels of bisphenol A (BPA) in components of dialysis machines may be toxic to the immune cells circulating in kidney failure patients' blood, according to a study that will be presented at ASN Kidney Week 2013 November 5-10 at the Georgia World Congress Center in Atlanta, GA.

The hormone disruptor BPA is found in various components of dialysis machines—or dialyzers—that filter kidney failure patients' blood. Researchers led by Mauro Neri (San Bortolo Hospital, in Italy) analyzed the amount of BPA released by three different types of dialyzers and the effects of the released BPA on immune cells found in the blood.

The investigators circulated 600 mL of cell culture media for 4 hours through the (Nipro Elisio 17H, BBraun Diacap, and Nipro Elisio 170H dialyzers. For each machine, they measured the eluted BPA mass and they evaluated the effect of BPA on viability, necrosis, and death of immune cells incubated for 24 hours in samples taken before and after treatment.

Elisio 17H released less BPA than the other dialyzers. Also, the viability was higher, while necrosis and cell death were lower in immune cells incubated in media circulated through this type of dialyzer.

"Use of alternative polymers for dialyzers' components may reduce BPA elution during dialysis. However, more experiments are needed to confirm these results," the investigators wrote.

More information: Study: "Toxicity of Bisphenol A in Hemodialysis: In Vitro Study" (Abstract 2149)

Provided by American Society of Nephrology

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