According to these results and consulted literature, we suggest that NO produced by the action of NOS on Arg alternatively could react with the nitrogen in the carbamoyl group of glutamine (Gln) to generate Glu (an excitatory neurotransmitter) and N₂ gas. Glu would undergo further decarboxylation to yield GABA (an inhibitory neurotransmitter), as favored by the gas laws since two volumes of NO gas are transformed into one volume of N₂. Thus, the production of Glu plus N₂ or the production of urea would be altered by antidepressant treatment, which would promote urea production by means of inhibiting citrulline/NO synthesis from Arg.

This interpretation of results is by analogy with the known reaction of ammonia combustion to yield N₂, with NO as an intermediate product. Such a reaction, in eukaryotic cells, would consist in the oxidation, by enzymatic catalysis, of the amino and amido groups contained in organic compounds (e.g., Glu) to produce NO (as an intermediate product) and finally N₂.

In brief, and following the previous scheme, treatment with antidepressants would modulate the urea cycle, coupled to Gln–Glu interconversion and decarboxylation of Glu to GABA, to yield urea instead of citrulline/NO plus N₂.

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**REFERENCES**

1. Oliveira JP, Zuardi AW, Hallak JE. Role of nitric oxide in patients with schizophrenia – A systematic review of the literature. Curr Psychiatry Rev 2008;4:219-27.

2. Vallée N, Rissoe JJ, Blatteau JE. Effect of an hyperbaric nitrogen narcotic ambience on arginine and citrulline levels, the precursor and co-product
Letters to Editor

3. Rostain JC, Lavoute C. Neurochemistry of pressure-induced nitrogen and metabolically inert gas narcosis in the central nervous system. Compr Physiol 2016;6:1579-90.
4. Musch W, Verfaillie L, Decaux G. Age-related increase in plasma urea level and decrease in fractional urea excretion: Clinical application in the syndrome of inappropriate secretion of antidiuretic hormone. Clin J Am Soc Nephrol 2006;1:909-14.
5. Tudela D. Ammonia-air mixtures can be explosive. J Chem Educ 1999;76:468.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.