Immunization against angiotensin II. A therapeutic vaccine against arterial hypertension

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Record Status
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Citation

Authors’ conclusions
The clinical relevance of arterial hypertension (AHT) does not lie so much in its characteristics as a disease, but rather in its high prevalence (25% of individuals over 18 years of age and 50% of those over 65 years of age) and in the increased risk of suffering serious vascular diseases associated with its lack of control.

A therapeutic vaccine for AHT is outlined as a potential strategy to obtain better control of arterial pressure and greater compliance with the treatment by the patients. These would need the subcutaneous administration of the product once every few weeks instead of the current treatments that are daily, and in many cases with several drugs.

Only one controlled clinical trial (CCT) (phase II) was recovered that had high methodological quality, and which studied the effectiveness and safety of the vaccine (CYT006-AngQb) for the treatment of moderate arterial hypertension (3140/90 mmHg). In addition, the results obtained with two different doses were analysed (100 μg and 300 μg).

The assessed study was made in a small population (72 patients) and had a short follow-up (8 months). Effectiveness with the administration of 300 μg was described, obtaining a significant reduction of the arterial pressure (AP) basically during the first hours of the day, the time at which the renin-angiotensin system is more active and more cardiovascular events take place.

The CYT006-AngQb vaccine is effective in the control of AHT in which the renin-angiotensin-aldosterone control system is involved. There are no data available for severe AHT and primary AHT since the CCT are in the execution phase. The administration of CYT006-AngQb was shown to be safe and well tolerated. It produced slight, transitory and fundamentally local adverse effects at the point of administration.

The active immunization (formation of anti-angiotensin II antibodies) lasts for 2-3 weeks, which is why it must be remembered to re-administer the dose after this time.

The work included a very small number of women and thus did not contribute data broken down by gender. Given the importance of AHT in women as a risk factor for cardiovascular diseases and diabetes, as well as the more difficult control of the AP (compared with that obtained in men), make it essential to include a greater number of women in the CCTs underway.

The vaccination can give a sensation of false security to the patients, who may then give less attention and control to other cardiovascular risk factors.

Project page URL

Final publication URL

Indexing Status
Subject indexing assigned by CRD
MeSH
Angiotensin II; Hypertension; Vaccines

Language Published
Spanish

Country of organisation
Spain

English Summary
English summary available

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AccessionNumber
32011000628

Date abstract record published
01/06/2011