

Screening for cystic echinococcosis: a European project implemented in a rural area of Romania

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Objectives

Having in mind the public health importance of cystic echinococcosis (CE) in southern and eastern countries of the European Union, our main objectives are: 1. To identify by ultrasound screening the population affected by CE in endemic rural areas of CEE countries; 2. To create CEE national registries for surveillance of CE; 3. To establish a representative bio-bank of genetic Egc isolates and blood/serum/plasma samples; 4. To validate new molecular-based POC-LOC kits for immunological surveillance, diagnosis and follow-up; 5. To identify factor/s associated with CE response to therapy or lack thereof through investigation of host-parasite interplay (parasite virulence vs human immunity), and 6. To increase drug bioavailability in an in vivo model, decreasing the length of antiparasitic (ABZ based) treatment of CE and synthesize a new enantiomeric drug based on ABZ.

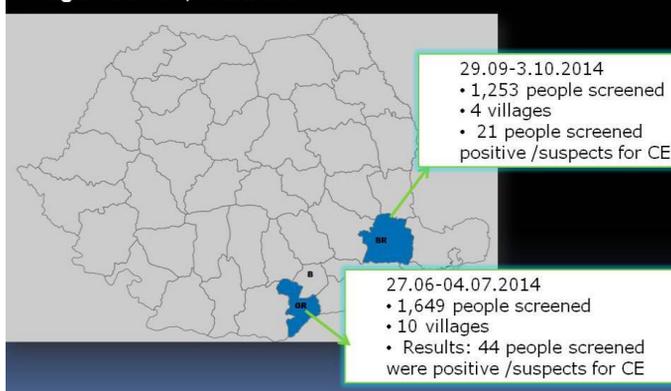


Methods

Our team is involved in HERACLES Project (Human cystic Echinococcosis ReseArch in Central and Eastern Societies). We use the protocols established and approved by the Grant agreement for collaborative projects (informed consent, survey rules, ethical rules, etc.). The activities are performed by members of the consortium from Italy, Bulgaria, Romania, Spain and Turkey, having as leader Instituto Superiore di Sanita, Italy. Our main involment is in dissemination of the correct information useful in the prevention and control of CE, identification by ultrasound screening the population affected in endemic rural areas of Romania, and the contribution to create the national registry, and finally to include our data in the European registry for CE.

Romania has 42 districts. Based on the clinical and epidemiological data, we have chosen Giurgiu district. Inside the district we have chosen 10 villages. We prepared the activities in Bucharest and we dedicated 6 full days to examine and discuss with as many as possible villagers from all age groups (being supported by county public health authorities, rural municipalities and general practitioners) (Figure 1 and 2).

Districts areas screened for Echinococcosis in 2014: Giurgiu & Braila, Romania

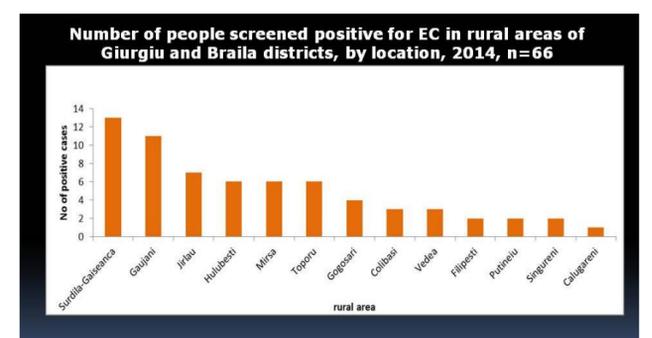
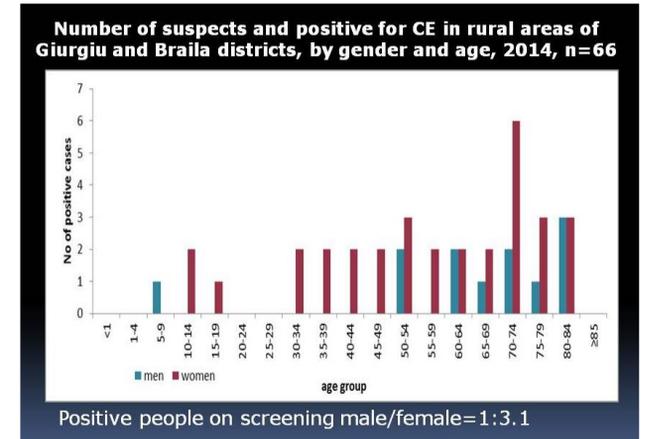


Results

Between 27th June - 4th July, 2014 we applied questionnaires, discussed, and collected informed consents from 1,649 villagers living in Calugareni, Colibasi, Gaujani, Pietrisu, Gogosari, Hulubesti, Mirsa, Singureni, Toporu, Vedea (most from Mirsa village). We present in comparison our activities in Giurgiu district and in Braila district, where we have done the second screening intervention in 2014. (Figure 3 and 4).

We examined them using 4 ultrasound equipment and collected blood from 44 suspected CE patients (12 males and 32 females), respecting the project protocols. Most of the cysts were localized in the liver (4 in the kidney, 3 in the spleen, 2 in the peritoneum, 1 retro-peritoneal, and 3 ovarian cysts). We present the results in comparison, Giurgiu and Braila counties. (Figure 5 and 6)

Having in mind the WHO classification we registered 10 CL, 16 CE 1, 2 CE 2, 4 CE 3, 12 CE 4, and 7 CE 5 (9 patients had more than one cyst). Most of the cysts had less than 3 cm, but 17 were greater than 5 cm. We found different pathological ultrasound signs in 43.27% females and 43.25% males. All suspected CE patients were invited to our clinic in order to perform more tests, establish the positive diagnosis, treatment and follow-up.



Conclusion

The field ultrasound screening allows the team to active highlight CE suspected patients. Searching for CE we can discover more medical conditions and thus we can be useful for people from rural areas without access to the medical system. In just several full working days a dedicated team would be able to present and discuss an important public health problem to more than one thousand citizens. Performing similar surveys and field activities, a team could contribute to the creation of a national and even European registry for a specific, neglected, public health issue.

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