



Biomolecular Characterization of *E. granulosus* Larval Form in Sardinian Patient Affected by Cystic Echinococcosis: Project Results

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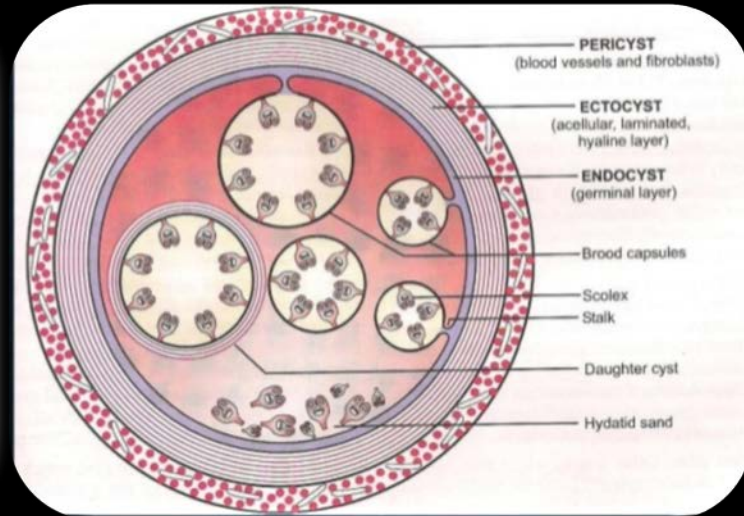
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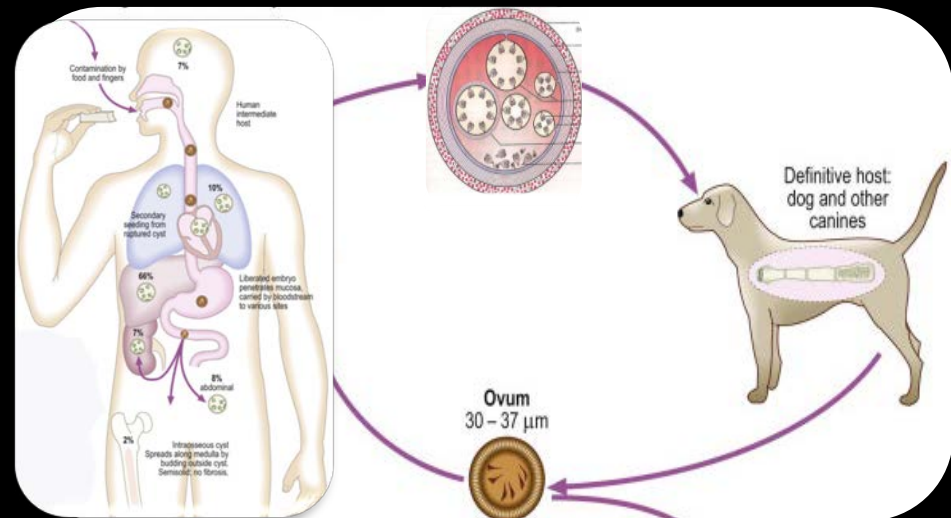
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Cystic Echinococcosis (CE) is a neglected zoonotic disease caused by the larval stage of the tapeworm *Echinococcus granulosus sensu lato* (s.l.).



The parasite life cycle typically includes intermediate hosts, usually ungulates, and definitive hosts, domestic and wild canids, harboring the adult worm.



Aim of the project

- Improve the knowledge of CE
- Increase the data flow (e.g. ERCE)
- Standardize the diagnostic and therapeutic paths and the follow up of CE patients on the base of OMS Guide Lines

**34 patients with symptoms referable to CE
from Sassari and Nuoro Hospital Wards were investigated**

19 males

15 females

Imagine techniques

23 CE cysts positive
21 liver /2 lungs

12 negative to CE cysts

Serum analysis: ELISA Echinococcus IgG (DRG)

Echinococcus WB IgG (LDBIO)

14 positive sera

20 negative sera

**CE Pos cases were included in the
European Register of Cystic Echinococcosis (ERCE)**

7 patients were undergone to surgery
hydatids excised: **HU1-HU7**



WHO classification

cysts stadium:
active - CE2

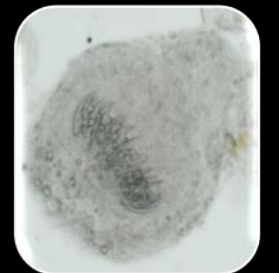
cysts stadium:
transitional CE3b

cysts stadium:
inactive - CE5



..... 7 hydatids surgically excised the external and internal structures were inspected by naked eye and a microscope

cysts	protoscolices
HU1	non-viable
HU2	non-viable
HU3	non-viable
HU4	non-viable
HU5	no
HU6	no
HU7	no

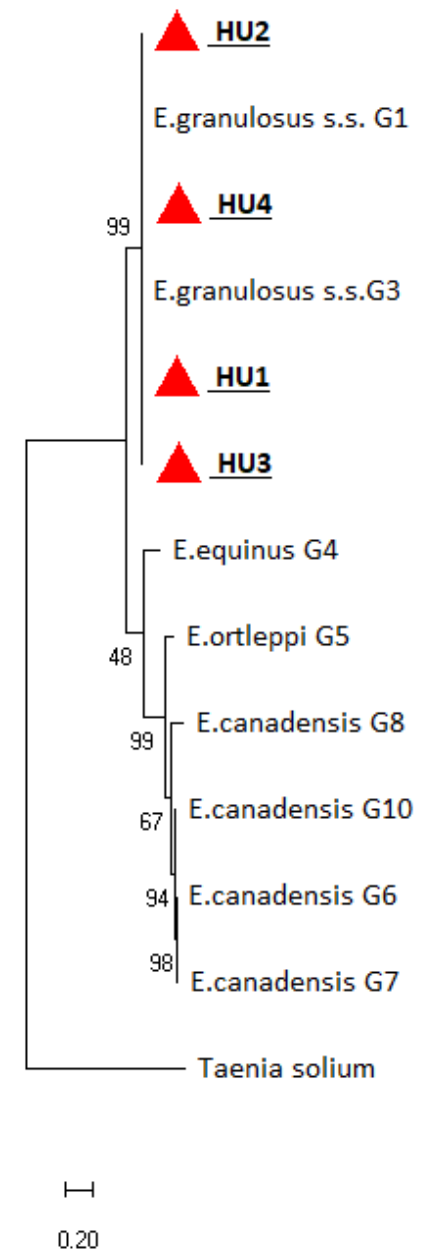


.....biomolecular characterization:
genotyping of larval form

PCR *E.g.s.s.* [primers: **Calreticulin (Cal)** gene of 1001 bp
(F5':CAATTTACGGTAAAGCAT-3' R5':CCTCATCTCCACTCTCT-3')].

cysts	PCR <i>E.g.s.s.</i>	genotype
HU1	<i>E. granulosus ss</i>	G3
HU2	<i>E. granulosus ss</i>	G1
HU3	<i>E. granulosus ss</i>	G3
HU4	<i>E. granulosus ss</i>	G1
HU5	neg	/
HU6	neg	/
HU7	neg	/

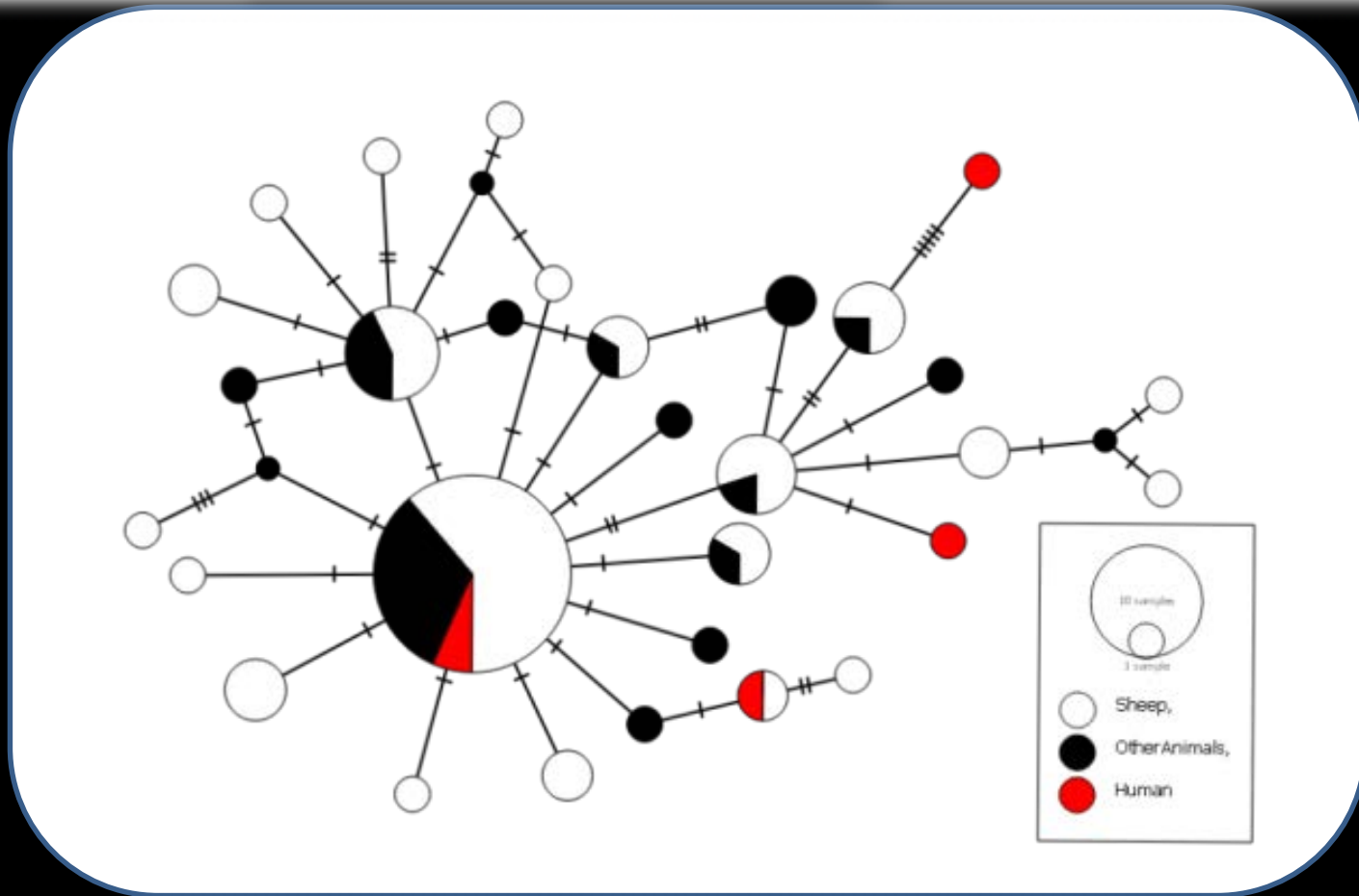
Maximum Likelihood Phylogenetic tree build on a dataset comprising 4 human isolates (**HU1, HU2, HU3, HU4**) of *E. granulosus* from this study and other reference sequences of *E. granulosus* s.l. retrieved from GenBank.



.....biomolecular characterization: sequencing analysis of larval form

•PCR for sequencing: **Cytochrome Oxidase I (COX1)**

(F5'-TTTTTTGGCCATCCTGAGGTTTAT-3' R5'-TAACGACATAACATAATGAAAATG-3') for].



Haplotype networks calculated on 83 DNA sequences of *E. granulosus* isolated in Sardinia from different animal species.

Thanks for your attention!!!