

The consequences of *Echinococcus granulosus* infection in the human population

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The human Echinococcosis is still a serious problem for the public health problem in Romania, despite the measures taken for the prophylaxis of the disease.

There were assessed patients hospitalized in surgical clinics for surgical treatment, between 1998 and 2002.

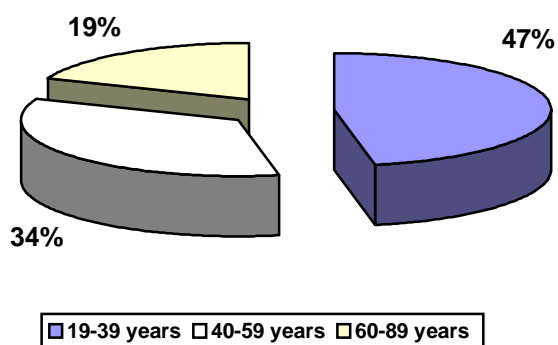
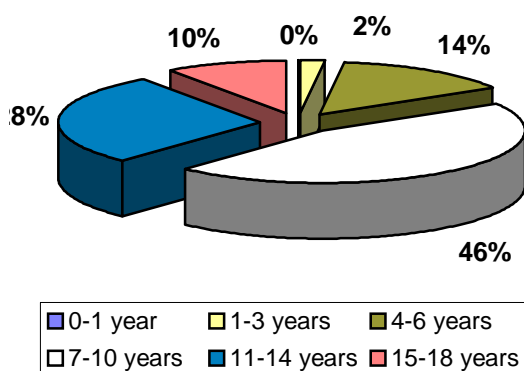
Ultrasonography, radiological examinations, and serological test ELISA, established the diagnosis, which was confirmed during surgery, for 200 patients.

Hydatidosis prevails in children of 7 to 14 years old, having an incidence of 46% in children of 7-10 years old, of 28% in the children of 11- 14 years old, and an lower incidence in other age groups: 14 % in children of 4-6 years old, 10 % in those of 15-18 years old, and a low incidence in small children of 1-3 years of ages.

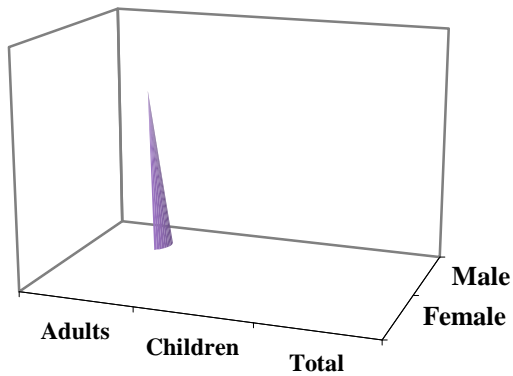
In Cluj are present a percentage of 39.3 of all operated hydatidosis and the rest of the cases have the following distribution: Bistrita-Nasaud (20.6%), Alba (15%), Hunedoara (6.5%), Sibiu (7.5%), Maramures (6.5%) and Salaj (4.7%). Although the total incidence of hydatidosis in rural communities is only slightly increased (57.9%) than in urban areas (42.1%), in some counties the incidence in village areas is significantly higher than in urban areas: Salaj (100%), Maramures (85.7%), Bistrita-Nasaud (68.2%).

Results and Discussion

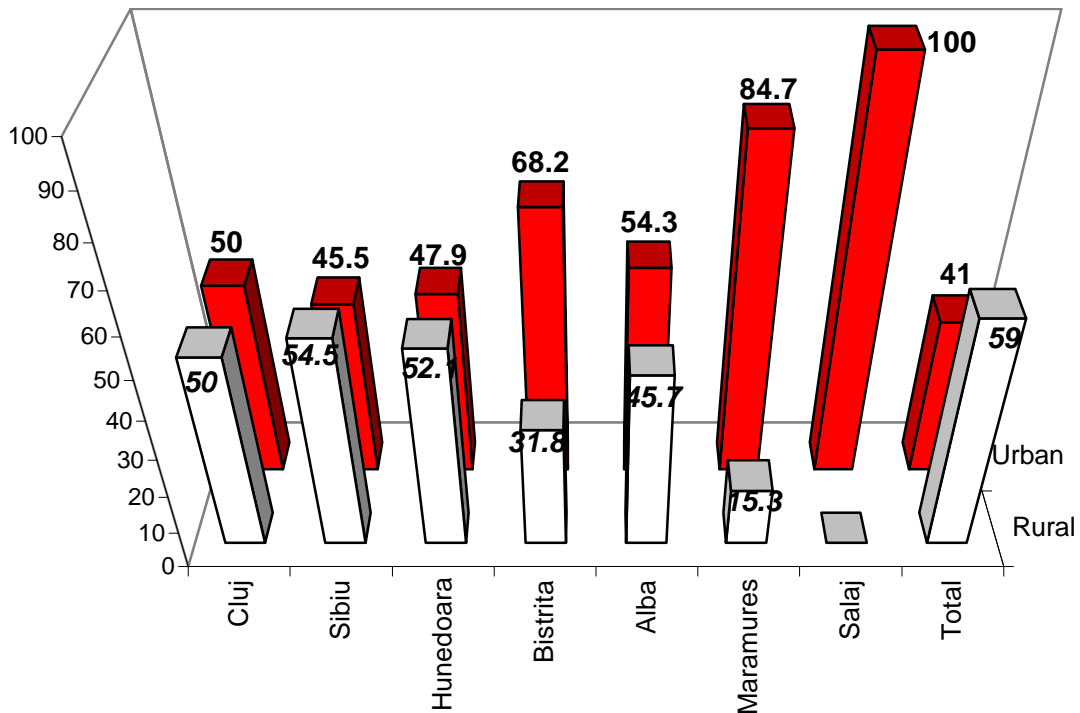
The echinococcosis is present in adults (46.5%) and children (55%), with a higher incidence in children.



Repartition of human Echinococcosis in children and adults



Repartition of human Echinococcosis according with gender -male, female



Geographical distribution of human Echinococcosis in children according with patient living location

In adults, the most common locations are the liver (83.9%), the lungs (9.7%), the spleen (1.1%) and the retroperitoneal space. In children the most common locations are the liver (60.7%), the lungs (20.6%), the liver and the lungs- double (14%), the spleen (1.9%), the kidneys (0.9%).

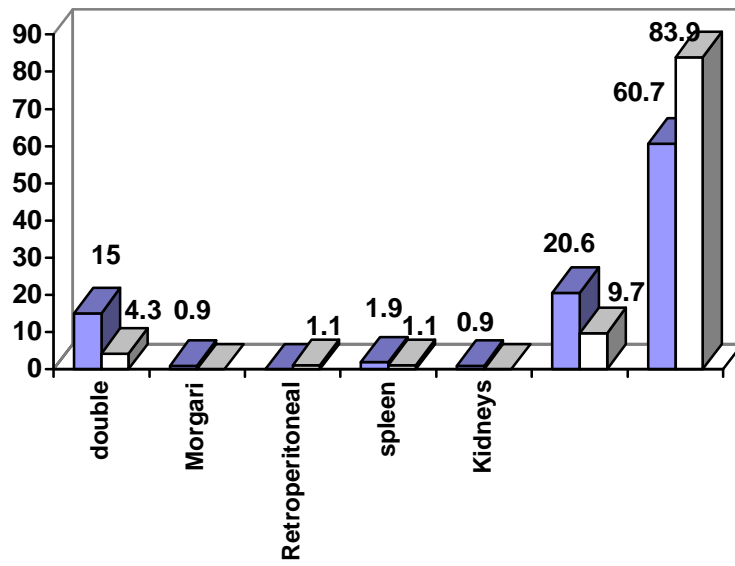
Most of the human Echinococcosis (71.5%) were diagnosed before they become complicated, but

28.5% are diagnosed due to the complications they produce.

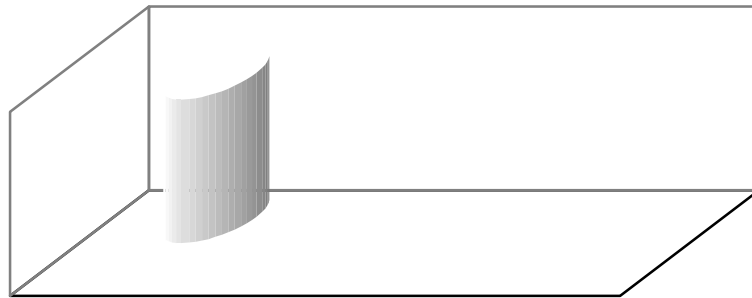
69.8% of the hepatic hydatidosis was diagnosed before the complications occurred (75.4% in children and 64.1% in adults). 77 % of the pulmonary hydatidosis was diagnosed before complications (64% in children and 89% in adults). Because the occurrence of complications 30.2% of the hepatic hydatidosis (24.6% in

children and 35.9% in adults) and 23% of the pulmonary hydatidosis (34.5% in children and

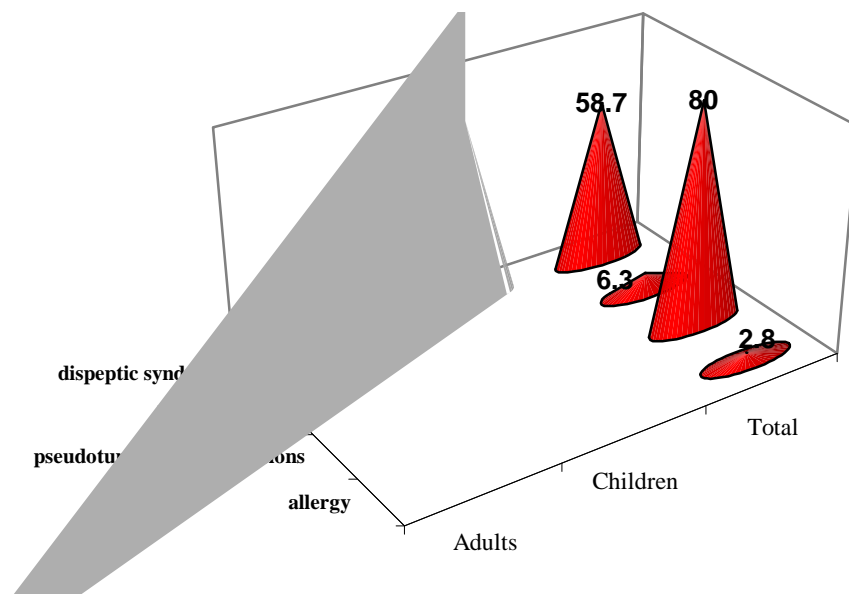
11.1% in adults) were diagnosed.



Location of human Echinococcosis in adults and children



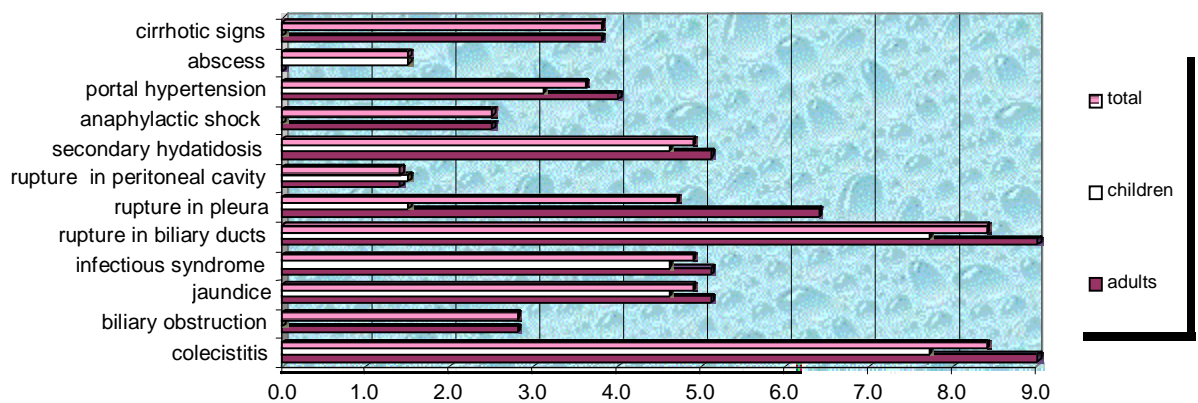
The stage of human Echinococcosis at hospitalization



Clinic of hydatidosis. Comparison between adults and children

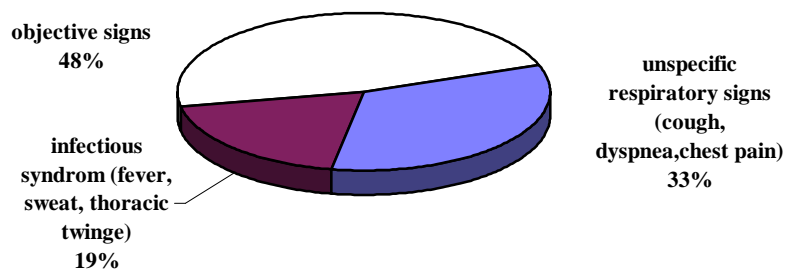
From the diagnosed adults 64,1 % have presented **liver hydatidosis** without complication and 35,9% hepatic hydatidosis with complication. The evolution of uncomplicated liver hydatidosis is like a biliary dyspeptic syndrome in 58% of cases (66.2% in children and 52.6% in adults), with pseudotumoral signs in 80% of the cases, like a biliary colic in 6.3% of cases (especially in adults 11.5%) and with signs of pressure on the organs placed in the next proximity: portal hypertension 2.1%. A percentage of 2.8 of toxic and allergic signs can occur (especially in children: 6.2%). The complications of the liver hydatidosis are angiocolecistitis in 8.4% of cases (9% in adults,

7.7% in children), jaundice in 4.9% (5.1% in adults and 4.6% in children), infectious syndrome by the fissure and secondary infection in 4.9% (5.1% in adults and 4.6% in children), rupture in 18.8% of cases (21.8% in adults and 15.4% in children). The rupture occurs in biliary ducts (9% in adults, 7.7% in children); in pleura, with the formation of pneumopericyst (6.4% in adults and 1,5% in children) or abscess in the abdominal wall (1.5% in children); in peritoneal cavity (1.4%) with the occurrence of anaphylactic shock (2.5% in adults). In adults, hydatid litiasis (2.8%) and cirrhotic signs (3.8%) may occur.



The complicated hydatidosis is more common in adults than in children. Complication of the human Echinococcosis in adults are rupture of the hydatic cyst, infection of the cyst, biliary lythiasis, cirrhosis. Complications of the hydatidosis in children are biliary obstruction, rupture of the human Echinococcosis in pleura, external biliary fistula.

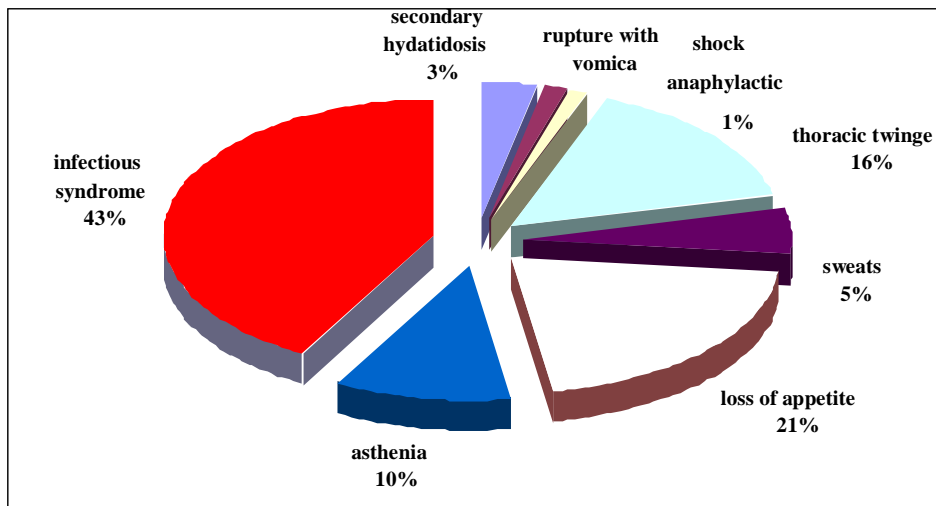
Lung hydatidosis are uncomplicated in 77% of cases: 63.7% of children and 88.9% of the adults and give rise to cough (63.6%), dispnea (54.5%) and pain in the chest (36.4%). All these symptoms are observable during the inspection of the patient (90.9% of cases).



Clinic of pulmonary hydatidosis in children are unspecific respiratory signs (cough, dyspnea, pain), infectious syndrom (fever, sweat, thoracic twinge) and objective signs.

The complications of the pulmonary hydatidosis are fissure and secondary infection of the cyst

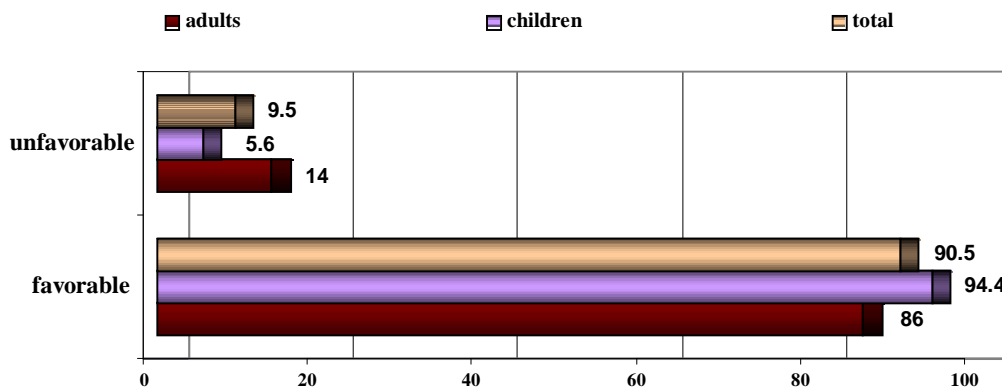
with the occurrence of an infectious syndrom with fever (36.4%), thoracic twinge (13.6%), sweats (4.5%), loss of appetite (18.2%), asthenia (9.1%). No severe complications occurred by the rupture of the hydatidosis with vomica or anaphylactic shock.



Surgical treatment of the human Echinococcosis in children was made by total cystectomy, drainage cystectomy, lavatory - coating cystectomy, pneumocystectomy with germinal membrane extirpation, drainage and coating, marsupialization.

Either surgical or drug therapy may conclude in a favorable evolution in 90.5% of cases (94.4%

of the children and 86% of the adults). The unfavorable postsurgical evolutions (9,5% of the cases- 5.6% in children and 14% in adults) are due to relapses (4.5%), secondary hydatidosis (1%) and postsurgical suppurative complications (3.5%). One of the patients died because of the complications (0.5%).



Evolution of the human Echinococcosis in children was favorable in the most of the cases, but also unfavorable evolution was registered in 5,6 % of the cases: relapses (4.5%), secondary hydatidosis. Evolution of the human Echinococcosis in adults was favorable in 86% with healing or amelioration, and unfavorable in 14% of cases.

Conclusions

- Hydatidosis is a major problem for the public health, responsible for 200 hospitalizations and surgical interventions per year, representing 0.6% of the surgical interventions during a year.
- The hydatid cyst is present in adults (46.5%) and children (53.5%), with an alarming high incidence in children of 7 to 14 years old (70.1% of the hydatid cyst diagnosed in

children). In adults hydatid cyst prevails in young adults (47%), has an incidence of 34% in adults of 40-60 years of age, 12.9% in those of 60-70 years of age and a low incidence in old people (6.5%). Hydatid cyst is more common in females (53%) than in males (47%). Is present with a percentage of 39.3 of all operated hydatid cysts in Cluj and the rest of the cases come from other areas of the county. Although the total incidence of hydatid cyst in rural communities is only slightly increased (57.9%) than in urban areas (42.1%), in some counties the incidence in village areas is significantly higher than in urban areas

3. Hydatidosis occur both in rural and urban communities, in both genders and all age groups, though it has an alarming high incidence in children.

4. Hepatic (71.5%) and pulmonary (15.5%) locations are frequent, leading by their chronic evolution to pseudotumoral signs, severe complications (1.5%), reserved prognosis (9.5%), especially in adults (14%) and even to death.

5. The establishment of the real incidence of hydatidosis is difficult but it is a necessity. There is an urge for the early diagnosis of the infected patients, by the development of the screening methods and a close collaboration among general practitioners, clinicians, laboratory doctors and statisticians. The prophylaxis for the hydatidosis is very important and it must be done by all meanings that can open the public eye about ways of contamination, the severe consequences of this disease that is also called “white cancer”.