(HK) was 60%. After 3 consecutive days with pdC1-INH 3000 IU the 24 h post-infusion C1-INH function was >70% and the patient was switched to 3000 IU three times per week for 5 weeks. At day 4, C4 and C1q were within the normal range; on day 9 cleaved HK returned to normal (≤30%). During this phase 48 h post-infusion C1-INH activity was >40%; all other parameters remained normal and the patient had no angioedema recurrences. From weeks 6 to 9, the patient received pdC1-INH 2000 IU twice per week. Forty-eight hours post-infusion C1-INH activity values were <30%, C4 reduced to 60%, C1q remained normal, cleaved HK reverted >40%: the patient became symptomatic with need for repeated on demand treatments.

Conclusion: Our study demonstrates that highly symptomatic C1-INH-HAE patients rapidly catabolize pdC1-INH probably due to hyperactivated target proteases. A high dose treatment regimen with pdC1 INH in these patients can restore normal C1-INH catabolism and achieve symptom control.

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Exploring the cost and burden of illness of hereditary angioedema in England

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Background: Hereditary angioedema (HAE) is a rare disease causing episodic, potentially life-threatening attacks of oedema. This study aims to define the burden of HAE in England from NHS and patient perspectives as published data are limited.

Method: A cross-sectional, retrospective study of the economic and humanistic burden of HAE (type I/II) using three data collection methods

1 Hospital Episode Statistics secondary care database analysis (all episodes 2011–2012).
2 The Health Improvement Network primary care database analysis (all interactions 2011–2012).
3 Subsequent research in five secondary care centres (4 England, 1 Scotland) collecting information from > 100 adult patients via medical records (past 2 years), patient self-completion questionnaires and centre interviews is ongoing.

Results: For HAE patients admitted to hospitals in the past 2 years for any reason (n = 1383) the direct cost to the NHS was £1619 per-patient-per-year vs £362 for matched controls (excluding hospital drug costs e.g. HAE specific medication, $P \leq 0.05$), giving an incremental cost of £1257 per HAE patient-per-year. Hospital admissions were more frequent for HAE patients (69% vs 21% for control, $P < 0.05$) with more bed days than controls (3.02 days per annum vs 0.95 for control, $P < 0.01$). The primary care cost (including HCP interactions and non HAE-specific drug costs) was £1102 for HAE patients (n = 112) vs £689 for controls giving an incremental cost of £413 per HAE patient-per-year. In total, HAE patients incurred an additional cost to the NHS of £2 308 807 or £1699 per-patient per-annum, not including costs for HAE-specific drugs. Due to limitations associated with current diagnostic and procedure coding, these costs may be underestimated.

Conclusion: This is the first comprehensive UK HAE burden of illness study. Although rare, HAE presents a burden to the NHS, related both to increased secondary and primary care costs relative to controls. These findings will be further investigated with results of the ongoing patient-perspective research.

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Cost-minimization of innovative C1-inhibitor self-administration strategies in Hereditary Angioedema

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Background: Replacement therapy with plasma-derived C1-inhibitor (pdC1INH) is used to treat acute Hereditary Angioedema due to C1-inhibitor deficiency (HAE) attacks. This treatment is usually administered intravenously in healthcare settings. Recently pdC1INH self-administration training programs were made available for patients with HAE. The aim of this study was to compare the economic impact of two alternative administration strategies for the treatment of HAE attacks. Economic evaluation was performed considering both the payer (Italian National Health System) and the social perspective.

Method: Seventeen patients who decided to switch to self-administration were interviewed before and 12 months after the beginning of the home therapy. The interviews allowed to collect data about the number and type of hospitalisation, the number of primary care emergency room visits, the number and type of treatment, the number of missed days of work/school, as well as other cost-generating relevant factors. We considered, in the payer perspective, only the medical costs while in the social perspective both medical and non-medical costs. The total costs per-capita of the two alternative strategies were calculated, by referring to scientific evidence and official data (such as DRGs, hourly labour costs, etc.).

Results: The self-administration strategy generates sensible savings amounting to a total of €25.313 per year, of which €15.078 may be ascribed to the payer perspective. On a per-capita basis, the total savings amount to €1.489,of which €887 are related to the payer perspective. The self-administration strategy results in an average saving of 90% compared with the health professional administration strategy.

Conclusion: Self-administration strategy is less expensive than health professional administration both in the payer and the social perspective. This economic evaluation model indicates the beneficial economic impact of implementing pdC1INH self-administration programs.

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Successful pregnancy outcome after treatment with C1-inhibitor concentrate in a patient with hereditary angioedema

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Introduction: Management of hereditary angioedema (HAE) in pregnancy is important as the possibilities for complications. We present a HAE patient with recurrent attacks during pregnancy, but uncomplicated labour under C1-inhibitor (Cl-INH) concentrate prophylaxis.

Case presentation: Twenty-eighty-year-old woman was admitted with recurrent attacks of abdominal pain and swellings of extremities and face without urticaria from early childhood. There was no history of angioedema in her siblings, but parents' history was unknown since they were dead years ago. She was diagnosed type I HAE with low levels of serum C4 (3.31 mg/dl, normal: 10–40 mg/dl), C1INH antigen (<2.80 mg/dl, normal: 18–32 mg/dl), and C1INH function (<1%, normal 70–132%). As she grew older, frequency and severity of her swellings increased. Long term prophylaxis was indicated with at least one attack in a week, and she was initially started on tranexamic-acid with no response. Afterwards she was improved with Danazol for 6 months. But when she

got married, the treatment was switched to C1-INH concentrate as needed therapy, and used 500 U of C1-INH concentrate for short term prophylaxis approximately once every week. She subsequently presented with positive pregnancy test, and got persistent swellings. Long term prophylaxis was started and her angioedema episodes were relieved with 1000 U C1INH concentrate per week. She received C1-INH concentrate during delivery, and was discharged with no complications. Finally the patient and baby are healthy in lactation period with 500 U of C1-INH concentrate as needed therapy.

Conclusion: Plasma derived C1INH concentrate is a safe therapeutic drug in HAE for pregnancy and delivery, as well as lactation period.

1366
Tongue edema, a case report

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Background: Angioedema is defined as recurrent episodes of skin or submucosal tissues with digestive symptoms or airway edema. It can put in danger patients life. This disease is infradiagnoses because it can go unnoticed. Hereditary angioedema It is transmitted by dominat autosomic way. Incidence: 1:50 000 three types: I (85%) quantitative deficiency, II (15%) qualitative deficiency and type III less frecuent, Diagnosis by clinical and lab tests (C1INH concentration, activity and C4).

Method: A 27 year old woman with recurrent episodes of tongue edema for 1 year. Personal precedents: Diabetes insulin dependent, hipotyroid, and hormonal contraception with estrogens. Familiar precedents: cousin with angioedema. Clinical course: episodes of tongue edema monthly unpredictable and with different intensity. In one ocassion mechanical intubation was required. Symptoms were not controlled with epinefrine, corticoids or C1IHN concentration. Lab tests were normal and genetic study was negative to FXII.

Results: Symptoms were controlled with icatibant (antagonist receptor of bradykinin). Preloaded syringe of 30 mg than patient can auto-administered subcutaneously when needed.

Conclusion: It is an Hereditary angioedema with normal C1INH and genetic study unknown. Scientific community must be alerted.

Classification of Non histaminergic angioedema.

A) With C1INH deficency (Hereditary or Acdquired),
B) With normal C1INH (Hereditary- with FXII mutation or unknown, Acdquired- medicaments or idiopathic).

1367
Type I hereditary angioedema clinical debut in a 72-years-old female patient

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Background: Hereditary angioedema (HAE) is an autosomal dominant disease caused by a deficiency in functional C1-inhibitor. Symptoms typically begin in childhood and worsen around puberty.

Patient and methods: A 73-year-old female patient has been suffering frequents episodes of edema at face, lips and tongue with mild difficulty in breathing and swallowing since November 2012. When symptoms started she was receiving treatment with an angiotensin-converting enzyme inhibitor (ACEi). Her father′s sister had also suffered angioedema. We realised the analytic screening for HAE obtaining a low value of C4 (3.44 mg/dl). We amplified the study of complement obtaining low values of quantitative C1-inhibitor (20.2 mg/dl) and functional C1-inhibitor (55%). Few months later we repeated the study of complement with similar results, although the functional value of C1-inhibitor was 44%. Normal results were obtained for C1q, C2 and C3. She has three daughters and a son who have never suffered from angioedema. Three of them show normal quantitative and functional values of C1-inhibitor, but a 44 years-old daugther shows repeated low values of C4 and quantitative and functional C1-inhibitor.

For some months the patient continued suffering frequents attacks in spite of have stopped the treatment with the ACEi and was treated in two occasions with Icatibant. In September 2013 we decided to start a therapy with an attenuated androgen because of the frequency and severity of the attacks. She started to take 2 mg of stanozolol every 8 h. Two months after begining this therapy the patient has not suffered new attacks.

Conclusion: We present a patient suffering from a type 1 HAE. The particularity of this case is the old age of the patient when symptoms appeared for the first time. We also underline that the patient′s daughter has not suffered until now symptoms suggestive of HAE in spite of reduced values of quantitative and functional C1-inhibitor.

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The traumatic effect of angioedema attacks in patients with hereditary angioedema

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Background: Hereditary angioedema (HAE) is an uncommon and a serious life-threatening disorder which is presented with swelling episodes on extremities, face and trunk and may cause intense feeling of helplessness and being terrified and appears to the person to occur from out of the blue. In our study, traumatic effect of angioedema attacks on mental health was researched in patients with Hereditary angioedema.

Method: In this study, 25 patients who were diagnosed as HAE and followed up by Istanbul Faculty of Medicine Allergy outpatient clinic were inclueded. Semi-structured interview form, The Impact of Events Scale-Revised (IES-R), Beck Depression Inventory, Beck Anksiety Inventory were applied to each patients.

Results: \Sixty percentage (15) of 25 patients who concented to participate were female. The mean age was 36.9 ± 14.1. 80% (20) of patients reported that they experienced the perception of life threat and for 12% (3) this was an ongoing problem. Beck Depression Inventory mean score of the entire group was 8.9 ± 8, Beck Anxiety Inventory mean score was 11.4 ± 8.7. The mean score of intrusion (reexperiencing the event) for angioedema attack was 8.8 ± 7.9, mean score for avoiding was 8.4 ± 6.6, increased arousal (hypervigilance) mean score was 7.5 ± 5.6. Patients who experienced laryngeal edema during attacks had higher scores of intrusion, avoiding and increased arousal according to the patients who didn't experienced, but these scores were not statistically significant. The scores of intrusion ($P = 0.04$) and increased arousal ($P = 0.03$) were statistically significant and all of IES-R subscale scores were high in HAE patients with depression.

Conclusion: In patients with HAE, anxiety and depression scores were founded higher than general population and the susceptibility of traumatic effect were more common in HAE patients with psychiatric symptoms. In this context, control and management of the presence of psychiatric symptoms is required for therapeutic alliance and having a healthier work, social and family life in these patients.