



 Convegno

 **EPIEN**
M E D I C A L

**ELIMINAZIONE DEL BIOFILM BATTERICO:
UN NUOVO APPROCCIO
PER IL TRATTAMENTO
DELLA PARODONTITE
E DELLA PERIMPLANTITE:
DALLA RICERCA ALLA CLINICA**

FIRENZE, sabato 16 maggio 2015
Hotel Albani (via Fiume, 12)

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Un nuovo approccio al trattamento della stomatite aftosa:

Studio di una serie di casi

D. Lauritano, F. Carinci

Firenze 16/05/2015

Recurrent Aphthous Stomatitis



1. DEFINITION



2. EPIDEMIOLOGY



3. PREDISPOSING ETIOLOGICAL FACTORS



4. CLINICAL MANIFESTATION AND PATHOGENESIS



5. MANAGEMENT



6. NEW THERAPEUTICAL APPROACH

Recurrent Aphthous Stomatitis definition

Recurrent Aphthous Stomatitis

- ❖ **the most common ulcerative disease of the oral mucosa**
- ❖ **painful round shallow ulcers with well-defined erythematous margin and yellowish-gray pseudomembranous center**



Recurrent Aphthous Stomatitis

Signs and symptoms

Recurrent Aphthous Stomatitis

- ❖ **a characteristic prodromal burning sensation that lasts from 2 to 48 hours before an ulcer appears**
- ❖ **healthy individuals**
- ❖ **typically located on the buccal and labial mucosa and tongue**
- ❖ **Involvement of the heavily keratinized mucosa of the palate and gingiva is less common.**



Recurrent Aphthous Stomatitis

Differential diagnosis

Recurrent Aphthous Stomatitis

- ❖ **Behçet's disease**
- ❖ **Cyclic neutropenia**
- ❖ **Recurring intraoral herpes infections**
- ❖ **HIV-related oral ulcers**
- ❖ **Crohn's disease**
- ❖ **Ulcerative colitis**



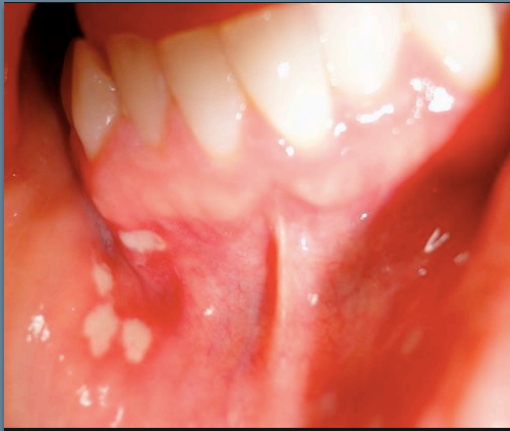
Recurrent Aphthous Stomatitis

causative agents

- ❖ **local factors:**
 - trauma**
- ❖ **microbial factors**
- ❖ **nutritional factors:**
 - deficiency of folate**
 - B-complex vitamins**
- ❖ **immunologic factors**
- ❖ **psychosocial stress**
- ❖ **allergy to dietary constituents**



Recurrent Aphthous Stomatitis Classification



Minor



Major



**Herpetiform
ulcers**



Recurrent Aphthous Stomatitis epidemiology

- ❖ **General population
20%**
- ❖ **Most females (57,2%)
than males (48,3%)**
- ❖ **Children 39%**
- ❖ **Peak 10-19 years**



Recurrent Aphthous Stomatitis predisposing etiologic factors

Etiologic factors:

- ❖ **Local**
- ❖ **Microbial**
- ❖ **Underlying medical diseases**
- ❖ **Hereditary and genetic factors**
- ❖ **Allergic**
- ❖ **Immunologic**
- ❖ **Nutritional**
- ❖ **Psychosocial stress**
- ❖ **Other factors**



Recurrent Aphthous Stomatitis

predisposing etiologic factors: local

Etiologic factors: local

- ❖ **Local trauma**
- ❖ **Negative association with smoking**
- ❖ **Changes in salivary composition:**
 - Ph**
 - Cortisol stress-induced**
- ❖ **Xerostomia:**
 - increased symptoms**



Recurrent Aphthous Stomatitis

predisposing etiologic factors: microbial

Etiologic factors: microbial

❖ **Negative association with:**

HSV

VZV

CMV

EBV

HP

Streptococcus sanguis





Recurrent Aphthous Stomatitis

**predisposing etiologic factors:
underlying medical diseases**

**Etiologic factors:
underlying medical
diseases**

- ❖ Behçet's syndrome
- ❖ Crohn's disease
- ❖ Celiac disease
- ❖ HIV-positive
- ❖ Cyclic neutropenia
- ❖ PFAPA



Recurrent Aphthous Stomatitis

**predisposing etiologic factors:
hereditary and genetic factors**

**Etiologic factors: ereditary
and genetic factors**

- ❖ **Susceptibility to RAS is significantly increased by its presence in one or both parents. Studies of identical twins have also demonstrated the hereditary nature of this disorder**



Recurrent Aphthous Stomatitis

predisposing etiologic factors: allergic factors

Etiologic factors: allergic factors

**No evidence of hypersensitivity
to:**

- ❖ **certain foods (milk, cheese, wheat)**
- ❖ **oral microbes
(*Streptococcus sanguis*)**
- ❖ **microbial heat shock protein**
- ❖ **nickel-based orthodontic appliances**
- ❖ **sodium lauryl sulfate
(toothpaste)**



Recurrent Aphthous Stomatitis

predisposing etiologic factors: nutritional factors

Etiologic factors: nutritional factors

Association of a subset of 5% to 10% of RAS patients with low serum levels of:

- ❖ **Iron**
- ❖ **Folate**
- ❖ **Zinc**
- ❖ **Vitamins B1, B2, B6 and B12**
(secondary to other diseases such as malabsorption syndrome or gluten sensitivity associated with or without enteropathy)

Hematologic screening of RAS is appropriate



Recurrent Aphthous Stomatitis

predisposing etiologic factors: psychological stress

Etiologic factors: Psychological stress

- ❖ Stress and psychological imbalance have been associated with RAS
- ❖ In women, appearance of RAS may coincide with menses
- ❖ Stress of academic load may be the precipitating factor for the higher prevalence of RAS in professional school students



Recurrent Aphthous Stomatitis

predisposing etiologic factors: other factors

Etiologic factors:

Other factors

**Significant association
with:**

- ❖ **Nonsteroidal anti-inflammatory drugs**
- ❖ **Beta-blockers**
- ❖ **Vasodilator**
- ❖ **Immunosuppressor**





Recurrent Aphthous Stomatitis

Clinical manifestation and pathogenesis

Clinical manifestation and pathogenesis

- ❖ **prodromal burning sensations that last from 2 to 48 hours before an ulcer appears.**
- ❖ **Ulcers are round with well-defined erythematous margins and a shallow ulcerated center covered with yellowish-gray fibrinous pseudomembrane.**



Recurrent Aphthous Stomatitis

Clinical manifestation and pathogenesis

Clinical manifestation and pathogenesis

**The onset of a RAS
lesion is associated with
cell-mediated immune
response, generation of
T cells and production
of TNF- α**

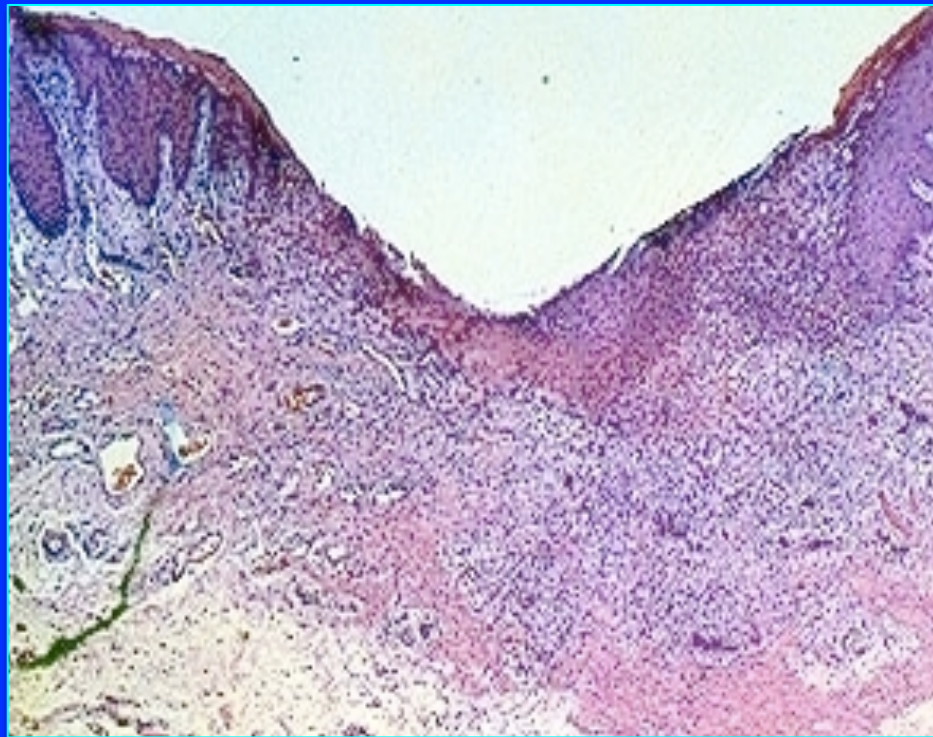


Recurrent Aphthous Stomatitis

Clinical manifestation and pathogenesis

Clinical manifestation and pathogenesis

Consequently, TNF- α -mediated endothelial cell adhesion and neutrophil chemotaxis initiate the cascade of inflammatory processes that lead to ulceration.







Recurrent Aphthous Stomatitis

Management

The proper treatment of RAS depends on the severity of symptoms, frequency, size, and number of the ulcers



Recurrent Aphthous Stomatitis

Management

Topical therapy

- ❖ Zilactin
- ❖ Orabase
- ❖ Diclofenac
- ❖ Amlexanox paste
- ❖ Magic mouth wash
- ❖ Topical steroids
- ❖ Topical tetracycline mouth wash
- ❖ Topical penicilline G troches



Zhou Y, Chen Q, Meng W, Jiang L, Wang Z, Liu J, et al. Evaluation of penicillin G potassium troches in the treatment of minor recurrent aphthous ulceration in a Chinese cohort: a randomized, double-blinded, placebo and no-treatment-controlled, multicenter clinical trial. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2010;109:561-6.

Recurrent Aphthous Stomatitis Management

Table 1. Local pharmacological treatments.

LOCAL PHARMACOLOGICAL TREATMENTS
1. <i>Antiseptics, anti-inflammatory and analgesics</i> (chlorhexidine mouthwash or gel 3 0.2% v / d; triclosan gel 3 v / d; topical diclofenac 3%; ointment amlexanox 5% 2-4 v / d).
2. <i>Antibiotics</i> (doxycycline gel at low doses).
3. <i>Topical corticosteroids</i> (triamcinolone acetonide 0.05-0.5% 3-10 v / d, fluocinolone acetonide 0.025 to 0.05% 5.10 v / d; Clobetasol Propionate 0.025%).
4. <i>Hyaluronic acid</i> (0.2% gel 2 v / d two weeks).
5. <i>Topical anesthetics</i> (topical lidocaine 2% spray or gel).
6. <i>Other: Laser, natural substances ...</i> (Nd: YAG, myrtle, quercetin, rosa damascena).

(v/d= times a day)

Belenguer-Guallar I, Jiménez-Soriano Y, Claramunt-Lozano A.

Treatment of recurrent aphthous stomatitis. A literature review.

J Clin Exp Dent. 2014 Apr 1;6(2):e168-74. doi: 10.4317/jced.51401. eCollection 2014.

Recurrent Aphthous Stomatitis

Management

Systemic therapy

- ❖ Systemic Prednisone
- ❖ Pentoxifylline (PTX)
- ❖ Colchicine (0.6 – 1.2 mg/day)
- ❖ Dapsone
- ❖ Thalidomide
- ❖ Azathioprine
- ❖ Etanercept



Recurrent Aphthous Stomatitis Management

Table 2. Systemic pharmacological treatments.

SYSTEMIC PHARMACOLOGICAL TREATMENTS
1. <i>Antibiotics</i> (penicillin G potassium, 50 mg pills 4 v / d 4 days).
2. <i>Corticosteroids</i> (initial dose of oral prednisone 25 mg / day and stepwise dose reduction for 2 months).
3. <i>Colchicine</i> (0.5 mg / day 7 days, 1 mg / day 7 days and a maintenance dose of 1.5 mg / day).
4. <i>Dapsone</i> (25 mg / day 3 days, 50 mg / day 3 days, 75 mg / day 3 days and a maintenance dose of 100 mg / day).
5. <i>Clofazimine</i> (100 mg daily for 6 months).
6. <i>Pentoxifylline</i> (400 mg 3 v / d for one month).
7. <i>Zinc sulphate</i> (150 mg / d).
8. <i>Immunomodulating</i> : thalidomide (50-100 mg per day), levamisole (150 mg three times a week during 6 months).
9. <i>Homeopathic substances</i> (mercurius solubilis, Natrum muriaticum, phosphorus, sulfuric acid, nitric acid ... 100 ml of water orally every 12 hours for 6 days).

(v/d= times a day)

Recurrent Aphthous Stomatitis

New therapeutical approach



Recurrent Aphthous Stomatitis

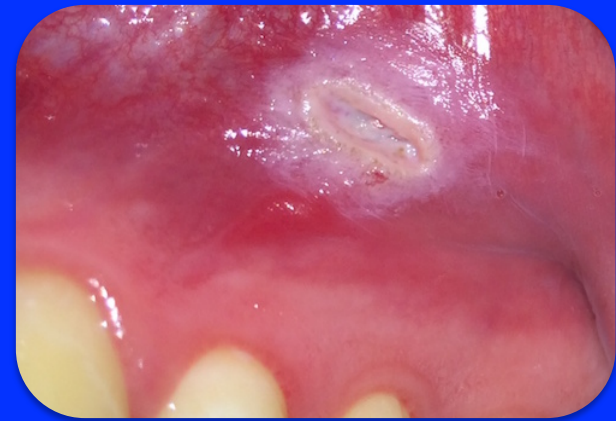
New therapeutical approach

	Group A	Group B	Total
female	16	14-1	30-1
male	14	16-2	30-2
Mean age	21,6	20,73	57



Recurrent Aphthous Stomatitis

New therapeutical approach



Recurrent Aphthous Stomatitis

New therapeutical approach

Differences in mean VAS score in Group A

Time interval	Mean VAS	SD	Difference from baseline	SD	% reduction from BL	t	P-Value
Pretreatment	7.867	0.900	-	-	-	-	-
day 1	6.5	1.137	-1.367	1.033	-17.38%	7.244	P<0.001
day 2	5.167	1.234	-2.7	1.119	-34.32%	13.218	P<0.001
day 3	3.967	1.273	-3.9	1.269	-49.57%	16.833	P<0.001
day 4	2.867	1.224	-5	1.313	-63.56%	20.857	P<0.001
day 5	1.367	1.159	-6.5	1.383	-82.62%	25.735	P<0.001
day 6	0.333	0.547	-7.533	1.042	-95.75%	39.612	P<0.001

Recurrent Aphthous Stomatitis

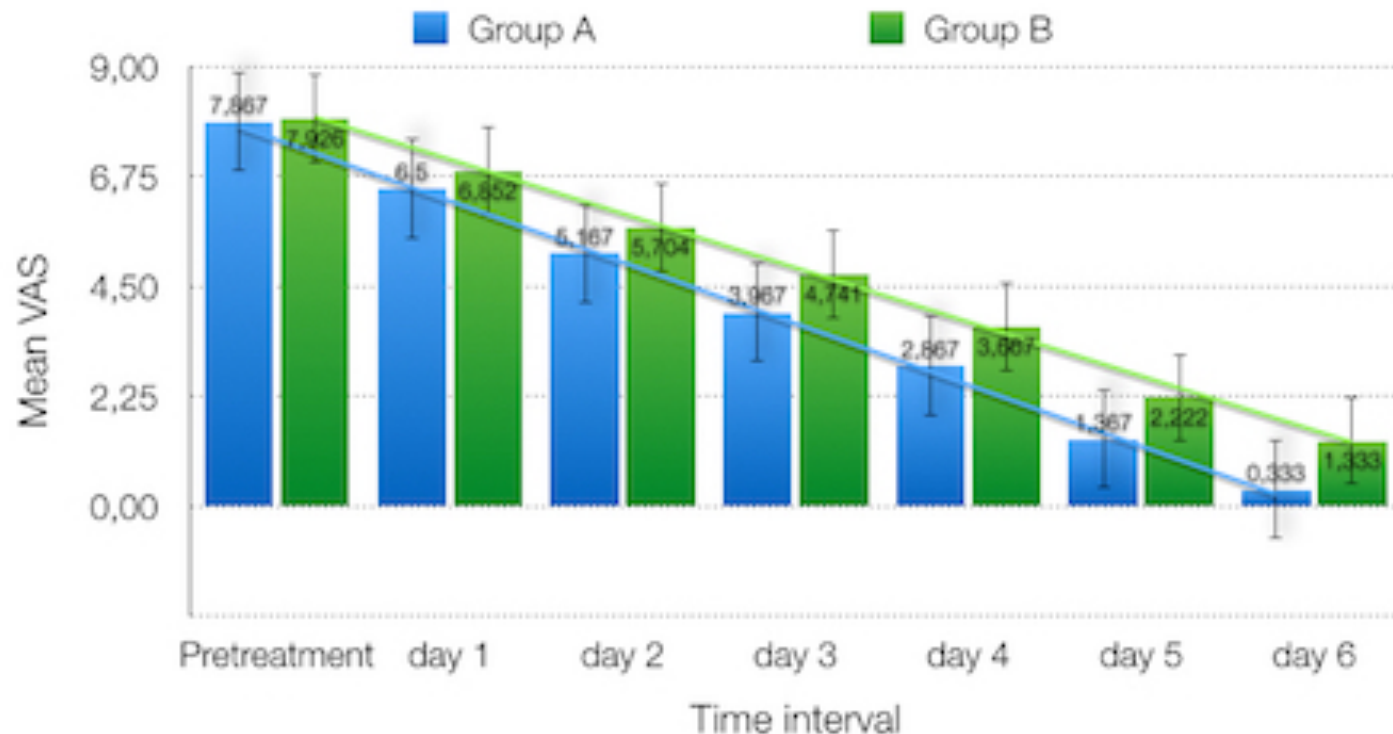
New therapeutical approach

Differences in mean VAS score in Group B

Time interval	Mean VAS	SD	Difference from baseline	SD	% reduction from BL	t	P-Value
Pretreatment	7.926	0.675	-	-	-	-	-
day 1	6.852	1.027	-1.074	0.917	-13.55%	6.088	P<0.001
day 2	5.704	1.137	-2.222	0.974	-28.03%	11.855	P<0.001
day 3	4.741	1.228	-3.185	1.001	-40.18%	16.527	P<0.001
day 4	3.667	1.301	-4.259	1.196	-53.74%	18.506	P<0.001
day 5	2.222	1.281	-5.704	1.137	-71.97%	26.059	P<0.001
day 6	1.333	0.679	-6.593	0.888	-83.18%	38.561	P<0.001

Recurrent Aphthous Stomatitis

New therapeutical approach



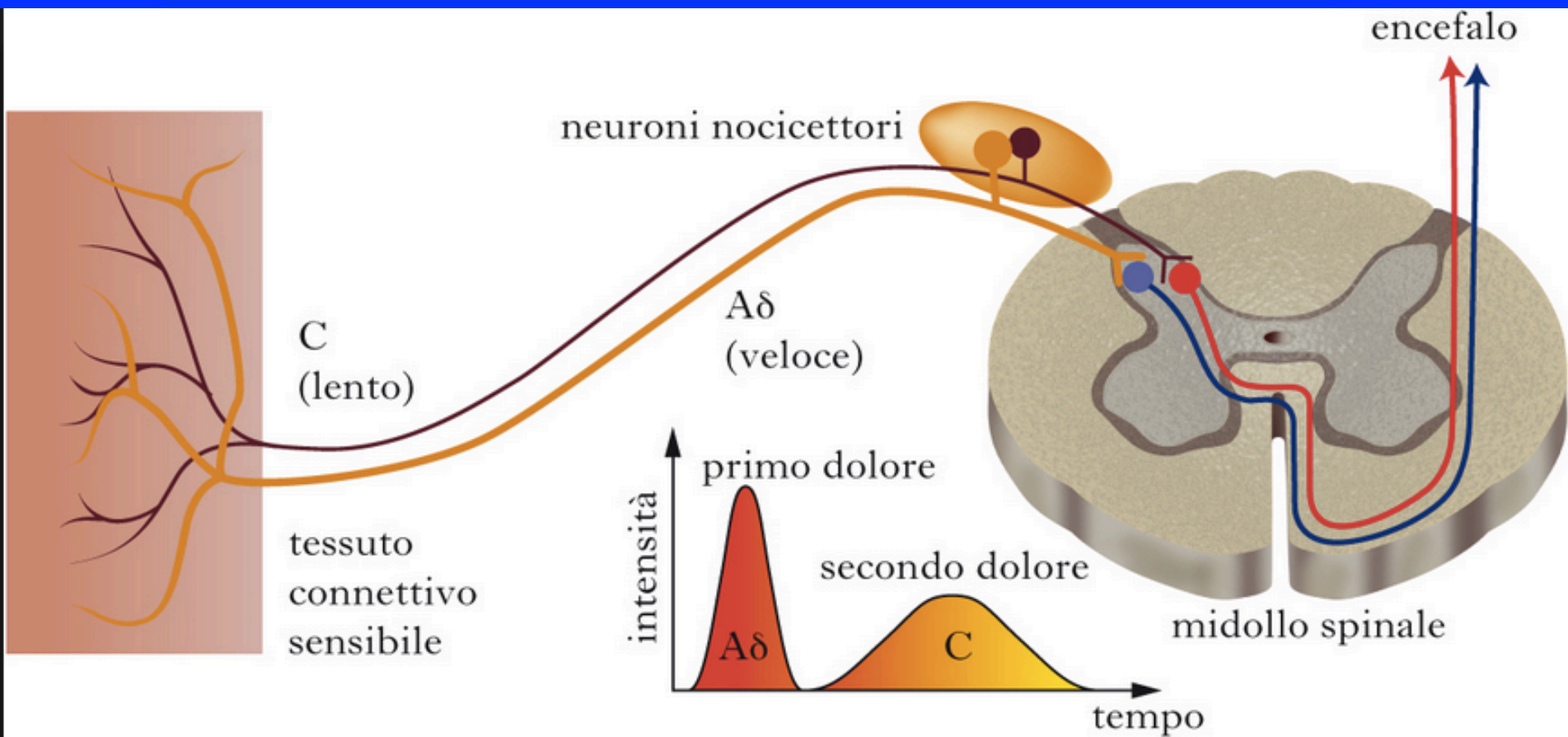
Recurrent Aphthous Stomatitis

New therapeutical approach



Recurrent Aphthous Stomatitis

New therapeutical approach



**“Se ho visto lontano
è perché stavo sulle spalle dei giganti”**

**Isaac Newton
1642-1727**

