Riabilitazione del paziente con cervico-brachialgia

Marco Paoloni – Francesco Ioppolo
Riabilitazione del paziente con cervico-brachialgia
Galeno riferisce di avere curato e guarito, con l’applicazione di medicamenti sul rachide cervicale, Pausania, affetto da un disturbo della sensibilità che interessava le dita di una mano.

‘De locis affectis’, II secolo d. C.
Outpatient visits for neck pain are common in the United States, and the majority (64%) are given symptom-based rather than pathology-based diagnoses.

An alternative diagnostic taxonomy may be needed to guide treatment

Riddle & Schappert, Spine 2007
Neck pain may be a feature of virtually every disorder and disease that occurs above the shoulder blades.

Any given clinician only sees a small portion of the whole spectrum of neck pain.

Bliss SJ, Flanders SA, Saint S, NEJM 2004
Riabilitazione del paziente con cervico-brachialgia
Interfering neck pain is defined as a condition which prompts the person to consider action; usually because of neck pain severity, duration, or because it interferes with the ability to function.
Once the individual experiences neck pain, he or she is likely to face 3 questions:

- “How should I care for this pain?”
- “Should I change the things I do (participation)?”
- “Should I (can I) file a claim to access financial benefits?”

The options available for the person to answer these questions depend on the particular environment and circumstances.
Riabilitazione del paziente con cervico-brachialgia
A person experiencing an **episode of interfering neck pain** would need to consider whether to modify his/her participation (defined in the ICF model as involvement in life situations, such as paid employment, leisure, or household responsibilities).
The “Claim” Complex

Factors: Demographic and Socioeconomic; Prior Health/Prior Pain/Comorbidities; Collision/Workplace; Psychological and Social; Compensation/Laws/Societal; Genetics; Health Behaviours; Cultural.

EPISODE OF INTERFERING NECK PAIN

Options:
- No Care
- Self-Care
- Health Care

Impacts:
- Impairments
- Activities
- Participation
- Well-being

Resolution

Long-term Outcomes
- Chronic Pain and Disability

Readjustment or Redefinition

Short-term Outcomes

Participation
- Modify

Environment

Guzman et al., Spine 2008
Riabilitazione del paziente con cervico-brachialgia
Factors Affecting the Onset and Course of Neck Pain

“Factor”
Any attribute of the person or his/her environment that can affect the onset, course, or care of neck pain and its consequences.

Independently of its origin, a factor should be classified as either **modifiable or not modifiable**

This is important for identifying interventions that are likely to have an impact on the onset, course, and care of neck pain.

Guzman et al., Spine 2008
The particulars of assessment, diagnosis, and management will vary according to the setting, the chosen (or available) health care provider, and personal preferences.

Different health care disciplines have different standards for assessing, diagnosing and managing neck pain.
Riabilitazione del paziente con cervico-brachialgia

Temporomandibular Joint Syndrome
The Impacts of Neck Pain

Factors: Demographic and Socioeconomic; Prior Health/Prior Pain/Comorbidities; Collision/Workplace; Psychological and Social; Compensation/Laws/Societal; Genetics; Health Behaviours; Culture

Impacts:
- Impairments
  - Body Functions and Structures
- Activities
  - Activities
- Participation
  - Participation
- Well-being
- Resource Use

Health Condition (disorder or disease)

Environment

Guzman et al., Spine 2008
Riabilitazione del paziente con cervico-brachialgia

How Long
The Outcomes of Neck Pain

Factors: Demographic and Socioeconomic; Prior Health/Prior Pain/Comorbidities; Collision/Workplace; Psychological and Social; Compensation/Laws/Societal; Genetics; Health Behaviours; Cultural.

EPISODE OF INTERFERING NECK PAIN

Options:
- No Care
- Self-Care
- Health Care

Impacts:
- Impairments
- Activities
- Participation
- Well-being
- Resource Use

Resolution
- Short-term Outcomes
- Long-term Outcomes
- Chronic Pain and Disability
- Readjustment or Redefinition

Environment

Guzman et al., Spine 2008

No neck pain
Interfering neck pain
Non-interfering neck pain

Participation
As Usual
Modify
Stop

No Claim
Care Claim
Disability Claim
Riabilitazione del paziente con cervico-brachialgia
A New Classification System for Neck Pain
● **Grade I neck pain**: No signs or symptoms suggestive of major structural pathology and no or minor interference with activities of daily living; will likely respond to minimal intervention such as *reassurance and pain control*; does not require intensive investigations or ongoing treatment.

● **Grade II neck pain**: No signs or symptoms of major structural pathology, but major interference with activities of daily living; requires *pain relief and early activation/intervention* aimed at preventing long-term disability.
• **Grade III neck pain**: No signs or symptoms of major structural pathology, but **presence of neurologic signs** such as decreased deep tendon reflexes, weakness, and/or sensory deficits; might require *investigation and, occasionally more invasive treatments*.

• **Grade IV neck pain**: Signs or symptoms of major structural pathology, such as fracture, myelopathy, neoplasm, or systemic disease; requires *prompt investigation and treatment*. 

__Riabilitazione del paziente con cervico-brachialgia__
“When choosing treatments to relieve grades I and II neck pain, patients and their clinicians should consider the potential side effects and personal preferences regarding treatment options.”

Guzman et al., Spine 2008
In the early stages of Grade I or II neck pain after a motor-vehicle collision (no radiculopathy or structural pathology):

- Reassurance about the absence of serious pathology.
- Education that the development of spinal instability, neurological injury or serious ongoing disability is very unlikely.
- Promotion of timely return to normal activities of living.
- If needed, exercise training and/or mobilization can provide short term relief.
In people with Grade I or II neck pain (no radiculopathy or structural pathology) but no trauma:

- Anti-inflammatory drugs, muscle relaxants, percutaneous neuromuscular therapy, mobilization, and laser therapy are more effective than placebos.
- Exercise training, mobilization and acupuncture are more effective in the short term than conventional medical care or “usual care.”
- There is no evidence to suggest that one medication is superior to another or to non-medication therapies.

Guzman et al., Spine 2008
• **Epidural and transforaminal corticosteroid injections** in **people with Grade III neck pain** (neck pain with radiculopathy) can provide short-term relief, but injections and other invasive treatments have unclear benefits in people with neck pain without radiculopathy.

• **Surgery** has not been proven helpful for common neck pain (Grade I or II), but it is sometimes helpful in **people with Grade III neck pain** (radiculopathy) or **Grade IV neck pain** (major structural pathology).
Table 8. Complications From Interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Common</th>
<th>Occasional</th>
<th>Rare</th>
<th>Remote</th>
<th>Not Enough Evidence to Make Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs</td>
<td>Dyspepsia</td>
<td>GI bleeding</td>
<td>Heart attacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle relaxants</td>
<td>Drowsiness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>Transient discomfort; dizziness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobilization</td>
<td>Minor, transient discomfort</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manipulation</td>
<td>Minor, transient discomfort</td>
<td></td>
<td></td>
<td>VBA stroke</td>
<td></td>
</tr>
<tr>
<td>Epidural injections</td>
<td></td>
<td>Increased pain; headache</td>
<td>Dural puncture</td>
<td></td>
<td>Major neurologic injury; Infection</td>
</tr>
<tr>
<td>Cervical root injections</td>
<td>Pain at injection; Increased radicular pain; lightheadedness</td>
<td>Increase neck pain; Headache; Nausea</td>
<td>Transient weakness</td>
<td></td>
<td>Major neurologic injury; Infection</td>
</tr>
<tr>
<td>RF facet ablation</td>
<td>Transient increased pain (2 wk); Permanent numb patch to neck</td>
<td></td>
<td></td>
<td></td>
<td>Poorly documented</td>
</tr>
<tr>
<td>Surgery—discectomy with or without fusion</td>
<td>Nonunion; Any serious complication (&gt;75 yr old); Dysphagia; Hoarseness (vocal cord dysfunction, any degree); Serious early complication with the use of BMP</td>
<td>Vocal cord paralysis (symptomatic); Donor site pain (persistent)</td>
<td>Permanent symptomatic vocal cord dysfunction; Root or cord injury; Vertebral artery injury</td>
<td>Other medical, aesthetic and surgical complications as for any surgery</td>
<td>Major neurologic injury; Infection</td>
</tr>
</tbody>
</table>

GI indicates gastrointestinal; VBA, vertebral-basilar artery; BMP, bone morphogenetic protein.

* Common: >10%; occasional: between 1% and 10%; rare: between 0.001% and 1%; remote: <0.001%.

Guzman et al., Spine 2008
Raccomandazioni diagnostico-terapeutiche SIMFER per la cervicalgia

Coordinatori:
Marco Monticone, Roberto Iovine*
Sezione SIMFER di Riabilitazione Ambulatoriale delle Menomazioni e delle Disabilità secondarie a patologie dell’apparato locomotore
* Sezione SIMFER di Evidence Based Medicine

S.I.M.F.E.R.
Società Italiana di Medicina Fisica e Riabilitazione
«Alla luce della contemporanea concettualizzazione del dolore cervicale, è raccomandato tenere in considerazione l’unitarietà bio-psico-sociale del soggetto con cervicalgia, considerando oltre agli aspetti clinici (severità e durata) anche le dimensioni personali, culturali e sociali (ambientali) nonché l’impatto indotto dal problema in termini di limitazione delle attività e della partecipazione»

Monticone et al., Raccomandazioni diagnostico-terapeutiche SIMFER per la cervicalgia 2011
Regole terapeutiche di buona pratica clinica

- Classificare il paziente in base a:
  - Tipo di dolore (acuto, subacuto e cronico)
  - Intensità dei sintomi
  - Categorie diagnostiche

Monticone et al., Raccomandazioni diagnostico-terapeutiche SIMFER per la cervicalgia 2011
Regole terapeutiche di buona pratica clinica

- Nei casi di cervicalgia acuta, adottare un approccio finalizzato al controllo dei sintomi che utilizzi gli strumenti terapeutici oggi a disposizione preferendo un approccio multidisciplinare e multimodale.
- Nei casi di cervicalgia persistente, un approccio attivo è da preferire a metodiche passive, includendo l’educazione del paziente e ricordando che metodiche passive possono aiutare il sollievo temporaneo del dolore.
- Un approccio conservativo e combinato (farmaci, esercizio specifico, terapia manuale, terapia fisica, terapia comportamentale, ed agopuntura) favorisce i risultati migliori.

Monticone et al., Raccomandazioni diagnostico-terapeutiche SIMFER per la cervicalgia 2011
Patient-oriented rehabilitation in the management of chronic mechanical neck pain: a randomized controlled trial.

Marco Paoloni, Emanuela Tavernese, Angelo Cacchio, Maria Tattoli, Laura Melis, Riccardo Ronconi, Valter Santilli

**Aim:** to determine if a Pa-O approach may be more beneficial for CMNP patients when compared to a Pr-O one.
Prescription-oriented (Pr-O) therapeutic approach

The use of various therapeutic modalities (e.g. exercise, manipulation, physical therapies) that are usually prescribed at the first medical referral on the basis of the patient’s current physical status, and are not changed or adjusted at any time during the treatment period.

Patient-oriented (Pa-O) therapeutic approach

The therapeutic program is scheduled at the start of each therapeutic session according to the patient’s current physical status.
Methods

Assessed for eligibility (n=264)

Excluded (n=44)
- Not meeting inclusion criteria (n=34)
- Declined to participate (n=10)

Randomized (n=220)

Pr-O group
Allocated to intervention (n=106)
Received allocated intervention (n=106)
Analyzed (n=106)

Pa-O group
Allocated to intervention (n=114)
Received allocated intervention (n=114)
Analyzed (n=114)

T0

T1
Methods PrO group

Baseline measurement (T0):
- Pain evaluation (VAS)
- Disability evaluation (NPDS-I)
- Therapeutic protocol assignment

Treatment:
- 10 applications for each prescribed intervention

End of treatment

Follow-up measurement (T1):
- Pain evaluation (VAS)
- Disability evaluation (NPDS-I)
- Patient’s response to the treatment

3 weeks

4 weeks
Riabilitazione del paziente con cervico-brachialgia

Baseline measurement (T0):
- Pain evaluation (VAS)
- Disability evaluation (NPDS-I)
- Therapeutic protocol assignment

Treatment:
- 4 application/week for each prescribed intervention

Week 1: Brief interview/clinical evaluation
- Treatment changed (therapies can be either changed or added or interrupted according to new clinical status)
  - 3 application/week for each prescribed intervention
- Treatment unchanged (overall satisfaction about clinical results)
  - 3 application/week for each prescribed intervention

Week 2: Brief interview/clinical evaluation
- Treatment changed (therapies can be either changed or added or interrupted according to new clinical status)
  - 3 application/week for each prescribed intervention
- Treatment unchanged (overall satisfaction about clinical results)
  - 3 application/week for each prescribed intervention

End of treatment
- 4 weeks

Follow-up measurement (T1):
- Pain evaluation (VAS)
- Disability evaluation (NPDS-I)
- Patient’s response to the treatment

Methods
PaO group
### Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Prescription-oriented-Group (n= 106)</th>
<th>Patient-oriented-Group (n= 114)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS score°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T0</td>
<td>69.00 (50.00-80.00)</td>
<td>70.00 (49.25-80.00)</td>
<td>NS</td>
</tr>
<tr>
<td>T1</td>
<td>33.00 (25.00-90.00)</td>
<td>21.50 (12.25-40.00)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>p value</td>
<td></td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Neck Pain and Disability Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T0</td>
<td>52.23 ±16.73</td>
<td>51.65 ±15.22</td>
<td>NS</td>
</tr>
<tr>
<td>T1</td>
<td>32.00 ±15.56</td>
<td>26.10 ±14.71</td>
<td>NS</td>
</tr>
<tr>
<td>p value</td>
<td></td>
<td></td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>VAS score°</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>48.80 (30.28-57.52)</td>
<td>61.52 (42.86-76.34)</td>
<td>&lt;0.005</td>
</tr>
<tr>
<td>Neck Pain and Disability Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>36.76 ±18.51</td>
<td>48.43 ±23.66</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>
We concluded that a Pa-O approach may be more beneficial in terms of pain and disability improvement in the short-term follow-up in suffers from CMNP. However, the occurrence of a performance-bias due to the increased level of attention from physicians to patients in Pa-O group, cannot be ruled-out.

**Clinical rehabilitation impact:**
a Pa-O approach should be considered for CMNP also in an outpatient facility.
CONCLUSIONS

- The primary perspective of interest is that of Persons with neck pain and related disorders
- The use a complex, multifactorial conceptual model for the onset, course, care, and consequences of neck pain outlines the options which may be available to the person in dealing with neck pain, the factors that determine available options, choices, and consequences and the short- and long-term impacts of neck pain
A syndromatic diagnosis is enough to manage most neck pain, rather than hunting for a specific tissue pathology, which can be counter-productive.

Often “less is more” when dealing with neck pain treatments, and multiple visits and treatments may make neck pain and disability worse rather than better.

Hurwitz et al, Spine 2008; Nordin et al., Spine 2008