“Same Same, But Different”

Innovation and Collaboration in Cardio-Respiratory Care

Chair – Ian Culligan
"Same Same, But Different"

Innovation and Collaboration in Cardio-Respiratory Rehab

Physiotherapy UK 2018

Physiotherapy, the ICU, critical illness & recovery

Gareth Cornell

Helen Sanger
PAST  NOW  FUTURE
The changing face of critical care physiotherapy
Rehabilitation after critical illness in adults

Quality standard [QS158] Published date: September 2017

Key Principles of Care
- Co-production of a rehabilitation pathway
- Continuous patient engagement
- Individualised, goal-directed rehabilitation programmes
- Involvement of patient and relatives
- Handover of information at transitions along the pathway
- Provision of information to patient and relatives

Pathway Phases and Transitions
- During Critical Care
- Before discharge from Critical Care
- During ward-based care
- Before discharge to home
- 2-3 months after discharge
Insulin resistance
Adrenal insufficiency
Hepatorenal dysfunction
Altered immune function
Reduce bone mineral density
Sensory abnormalities
Chronic pain

Critical Illness is not good for your health...

Lee et al. *Crit Care Med* 2016;44:2270-74
Schellekens et al. *Critical Care* 2016;20:103
Mapping recovery from critical illness
Critical Care as a rehabilitation environment
Physiotherapy works

Critical Care
Transform services & pathways
Emerging diagnostics & therapeutics
Raise the bar!
Workforce development
The patient journey
"Same Same, But Different"

Innovation and Collaboration in Cardio-Respiratory Rehab

Inspiring Excellence in Cardio-respiratory Care
Same same, but different.....
Time to let go

Ema Swingwood
@emaroids1
Reflection
Patient A

• Diagnosed with MND 5 years ago, no DNAR in place

• MI-E and nocturnal ventilation, wheelchair bound

• Lives in own house with family (carers)

• 3rd admission in 3 month period “needing Physio”
In hospital

- Increasing NIV requirements
- Refusing regular Physio Ax and Rx
- BUT Multiple bleeps for ‘chest PT’

- Acute deterioration

- Chest PT = 1hr plus sessions 2-3 Physios
Patient B-Paul

• Diagnosed with MND 6 years ago

• Lives with Mum and daughter

• Reduction in mobility, speech over last 18/12

• Has MI-E and nocturnal ventilation

• DNAR in situ
Treatment

• In hospital
  – NIV when initially admitted
  – MI-E day ½

• At home
  – Nothing
  – Mum nagged
Meanwhile back in the office
Mechanical insufflation-exsufflation for people with neuromuscular disorders (Review)

Morrow B, Zampoli M, van Aswegen H, Argent A
Laryngeal response patterns influence the efficacy of mechanical assisted cough in amyotrophic lateral sclerosis

Tiina Andersen,1,2,3 Astrid Sandnes,3 Anne Kristine Brekka,4 Magnus Hilland,5 Hege Clemm,3,6 Ove Fonden,1 Ole-Bjørn Tysnes,7,8 John-Helge Heimdal,5,8 Thomas Halvorsen,3,6 Maria Vollsæter,1,3,6 Ola Drange Røksund4,6
Review article

Airway clearance techniques in neuromuscular disorders: A state of the art review

Michelle Chatwin\textsuperscript{h,*}, Michel Toussaint\textsuperscript{b}, Miguel R. Gonçalves\textsuperscript{c}, Nicole Sheers\textsuperscript{d}, Uwe Mellies\textsuperscript{e}, Jesus Gonzales-Bermejo\textsuperscript{f}, Jesus Sancho\textsuperscript{g}, Brigitte Fauroux\textsuperscript{h}, Tiina Andersen\textsuperscript{i}, Brit Hov\textsuperscript{j}, Malin Nygren-Bonnier\textsuperscript{k}, Matthieu Lacombe\textsuperscript{l}, Kurt Pernet\textsuperscript{b}, Mike Kampelmacher\textsuperscript{m}, Christian Devaux\textsuperscript{n}, Kathy Kinnett\textsuperscript{o}, Daniel Sheehan\textsuperscript{p}, Fabrizio Rao\textsuperscript{q}, Marcello Villanova\textsuperscript{r}, David Berlowitz\textsuperscript{d}, Brenda M. Morrow\textsuperscript{s}
Respiratory Physiotherapy

Airway Clearance Techniques (ACT's)

Proximal ACT's "Cough Augmentation"

- Assisted Inspiration
  - Single Breaths
  - Mechanical Insufflation
  - Non Invasive Ventilation (NIV)
  - Intermittent Positive Pressure Breathing (IPPB)
  - Stacked Breaths
  - Air Stacking (AS)
  - Glossopharyngeal Breathing (GPB)
  - Volume Cycled NIV
  - Lung Volume Recruitment Bag
  - Resuscitation Bag with Patient Holding Their Breath

- Assisted Expiration

- Assisted Inspiration and Expiration
  - Manual Assisted Cough (MAC)
  - Mechanical Exsufflation

Peripheral ACT's "Sputum Mobilizing"

- Manual Techniques (MT)
  - High Frequency Chest Wall Oscillation (HFCWO)
  - High Frequency Chest Wall Compression (HFCWC)
  - Intrapulmonary Percussive Ventilation (IPV)
  - Chest Wall Strapping (CWS)
Paul’s first fundraising event for MNDA

Charity football match for MNDA—now on crutches
A scooter for continued independence
“parking is murder mind” ;-)
Curry night with Mum, March 2017

Enjoying the football on his 42nd Birthday...... Paul died 4 months later
Learning points

• Nil links with the literature—that’s ok!

• Communication key

• Respect of patient wishes

• Importance of de-briefing
“Don’t let life pass by while you focus on the end.....Take off your seatbelts and enjoy the ride”

Thank you to Paul’s family for use of photos!
"Same Same, But Different"

Innovation and Collaboration in Cardio-Respiratory Rehab

Lucy Gardiner, Specialist Respiratory Physiotherapist, Barts Health NHS Trust
Harriet Shannon, Senior Teaching Fellow, UCL
“No need for additional RCTs comparing respiratory rehabilitation and conventional community care in COPD”

Lacasse et al., 2007
National COPD Audit 2017

Overall completion of PR programmes has improved

2015: 59%
2017: 62%
National COPD Audit 2017

**National QI priority**

- **Increase completion rates**
  Following PR assessment, patient completion rates should be 70% or more

**Tips on how to achieve this**

- Review completion rates, to identify non-completion factors
- Develop systems to identify patients at risk of exacerbation and hospital admission
- Implement local strategies with specialist and community COPD teams to improve:
  - Diagnosis, the optimisation of drug treatment, management of co-morbidities, and the promotion of smoking cessation and winter vaccination

**How this priority was derived**

The 2015 PR outcomes report found that PR completion was associated with lower hospital admission rates.
Adherence

Factors affecting attendance

- Organisation of classes
- Referral process
- Perceived benefit and effectiveness
- Perceived health
- Other priorities
- Past negative experience of PR or exercise
- Gender, smoking status, living alone

Cox et al., 2017; Mathar et al., 2015; Sohanpal et al., 2015
Adherence

Factors affecting **attendance**

- Organisation of classes
- Referral process
- Perceived benefit and effectiveness
- Perceived health
- Other priorities
- Past negative experience of PR or exercise
- Gender, smoking status, living alone

Factors affecting **non-completion**

- Travel and transport
- Expectation of improvement
- Illness
- Psychosocial
- Other commitments
- Modest role of functional performance and pulmonary function

Cox *et al.*, 2017; Mathar *et al.*, 2015; Sohanpal *et al.*, 2015
Sohanpal et al., 2015
Music and Dance

“The combination of movement and music during dance results in a distinct state characterized by acutely heightened pleasure, which is of potential interest for the use of dance in therapeutic settings”

“Dancing to groovy music results in substantially increased feelings of pleasure, compared to listening in the absence of motion, even in individuals without previous dance training”

Bernadi et al., 2017
Benefits

• **Cardiovascular** (Merom *et al.*, 2016)
  “Moderate intensity dancing was associated with a reduced risk for cardiovascular disease mortality to a greater extent than walking”

• **Brain plasticity** (Rehfeld *et al.*, 2018)
  “Dancing compared to conventional fitness activity led to larger volume increases in more brain areas, including the cingulate cortex, insula, corpus callosum and sensorimotor cortex”

• **Posture** (Kattenstroth *et al.*, 2013)
  “In the dance group, beneficial effects were found for dance-related parameters such as posture and reaction times, but also for cognitive, tactile, motor performance, and subjective well-being”
Take home messages

• We know what we do works
• Importance of patient-centred, holistic care
• Importance of enjoyment and pleasure in adherence
Take home messages

• We know what we do works
• Importance of patient-centred, holistic care
• Importance of enjoyment and pleasure in adherence

Patients are increasing in their complexity; our practice needs to evolve and integrate to meet their needs...
References


Harriet Shannon, Teaching Fellow @HarrietShannon
The best exercise is the one you will do, and keep doing

*Every physio ever, 2018*
The best exercise is the one you will do, and keep doing. Every physio ever, 2018
Things that Stacey says to me...

Ut på tur, aldri sur

Norwegians are born with skis on their feet

Tap for all del ikke lysten til å gå. Jeg går meg til det daglige velbefinnende hverdag og går fra enhver sykdom
Is outdoor walking as effective as conventional PR at increasing exercise capacity and health-related quality of life?
Wettest summer in 111 years

September 3, 2011

It's official: The heavy rains that started pouring down on southern and eastern Norway in June resulted in the wettest summer since 1900. This year's summer rains also drowned the last record set in 1950.
“It doesn’t feel like an exercise class, it is simply going for a walk with friends – and that feels normal for us.”
8 years later...

4 week inpatient pulmonary rehabilitation programme

- The patients do outdoor walking almost every day (with or without walking poles)
- Once a week we go for a full day walk.
- All the patients pack their own packed lunch, we go for a walk in groups (usually two groups with the more active or less active patients)
- We eat and drink coffee outside around a campfire.
“The effectiveness of the exercise may not be as good for all the patients, but there was great pleasure achieved in being out in nature and enjoying a cup of coffee and nice conversations around the fire. This is an experience many of the respiratory patients haven’t been able to enjoy for many years. Many patients express happiness and mastery from being able to participate.”
Meanwhile in Switzerland...
PR programme

• Participants attend the outpatient clinic three times per week (Monday, Wednesday and Friday) for 12 weeks
• Total of 36 sessions of physical training.
• Monday, Nordic walking.
• Wednesday and Friday cardiopulmonary endurance training and dynamic strength training in the hospital.
• Patients participate at Nordic walking (NW) in the woods or park for 1 hour. Warm up for 5-10mins and cool down for 5-10mins.
• Patients who attend to NW in the woods are in a better cardiopulmonary condition and are safe walking on rough ground.
• Cut-off is based on the 6MWT performance (300m). If patients improve, they can change from the park-group to the woods-group.
### Effectiveness?

<table>
<thead>
<tr>
<th>Assessments</th>
<th>Mean improvement from 83 patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>6MWT</td>
<td>75.23 metres</td>
</tr>
<tr>
<td>Sit-to-stand</td>
<td>5.1 repetitions</td>
</tr>
<tr>
<td>CRQ Dysfunction</td>
<td>0.64 points</td>
</tr>
<tr>
<td>CRQ Fatigue</td>
<td>0.56 points</td>
</tr>
<tr>
<td>CRQ Emotion</td>
<td>0.65 points</td>
</tr>
<tr>
<td>CRQ Mastery</td>
<td>0.68 points</td>
</tr>
</tbody>
</table>
Take home message...

The best exercise is the one our patients will do, and keep doing. Let’s all go to the woods!

Talk to me on Twitter @HarrietShannon