



Departamento de Neurociências e Ciências do Comportamento
Faculdade de Medicina de Ribeirão Preto - Av. Bandeirantes 1580 - Campus Universitário



ESTUDOS OBSERVACIONAIS

TRANSVERSAIS

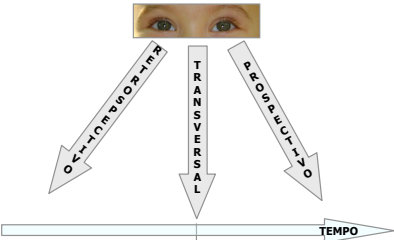
Taiza E. G. Santos-Pontelli

NCC5701 - Metodologia Científica e Estudos Clínicos

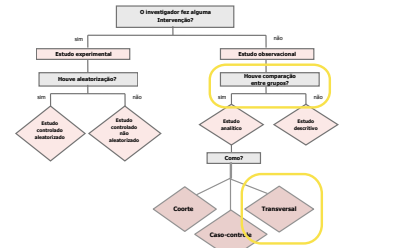
TÓPICOS DA APRESENTAÇÃO

1. Período de observação
2. Estudos transversais: conceitos
3. Estudos transversais: descritivos, analíticos, mistos
4. Prevalência: de ponto, de período
5. Estudos transversais: vantagens e desvantagens
6. Exemplos

PERÍODO DE OBSERVAÇÃO

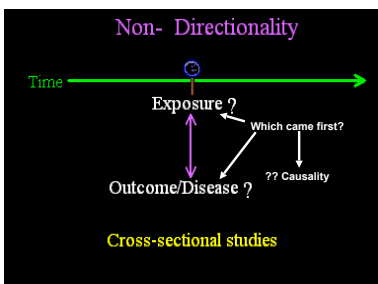


TIPOS DE ESTUDOS CLÍNICOS

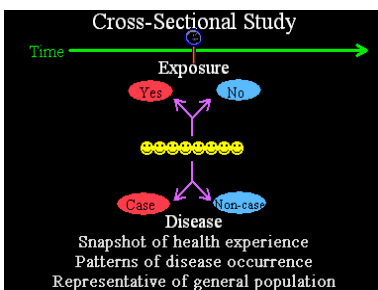


ESTUDOS TRANSVERSAIS

- Estudo observacional: não há intervenção do pesquisador
- Pessoas são estudadas em um momento, sem acompanhamento (*follow-up*)
- Medida de exposição de interesse e desfecho ocorrem em um mesmo tempo (Ex: obesidade e hipertensão)
- **NÃO HÁ CONSTRUÇÃO DE DIREÇÃO** dos eventos de exposição e desfecho



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ESTUDOS TRANSVERSAIS

- Podem ser:
 - Descritivo
 - Analítico
 - Ambos
- Pode-se conduzir estudos transversais repetidos para medir mudanças na população:
 - associação temporal de inferência (não da mesma população)
- Incluem os estudos tipo *survey*

ESTUDOS TRANSVERSAIS DESCRITIVOS

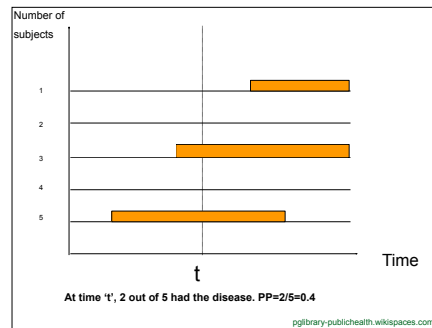
- **Objetivo:**
 - Descrever uma doença em um tempo, lugar, ...
 - Gerar hipóteses
- **Análises**
 - Médias e desvios padrões
 - Medianas e percentis
 - Proporções - prevalência
- **Razões**
 - Análise específica de grupos (ex: idade, gênero,...)

ESTUDOS TRANSVERSAIS ANALÍTICOS

- Medida de impacto:
 - Fator de risco
 - Fração atribuível (expostos)
 - Fração atribuível (população)
 - Fator de proteção
 - Fração de prevenção (expostos)
 - Fração de prevenção (população)
 - Proporções - prevalência
 - Razões
 - Análise específica de grupos (ex: idade, gênero,...)

ESTUDOS TRANSVERSAIS

- **Prevalência:** proporção de sujeitos que têm a doença em um determinado momento
- Exemplo:
 - Entre as 2500 mulheres idosas, 50 apresentavam hipertensão em fevereiro de 2014
 - A proporção da prevalência de hipertensão era de $50/2500=0,02$ ou 2%
- Prevalência de ponto
- Prevalência de período



PREVALÊNCIA DE PONTO

$$P = \frac{\text{Número de indivíduos com a doença no momento do período do estudo}}{\text{Número de indivíduos na população no mesmo momento}}$$

$$P = \frac{\text{Número de indivíduos com doença no momento que o indivíduo é estudado}}{\text{Número de indivíduos estudados}}$$

- Paradoxo: Ponto de prevalência de anormalidades congênitas

PREVALÊNCIA DE PERÍODO

- Prevalência durante um período definido
- Representa a proporção de uma população manifestando a doença no período de tempo
 - População em risco = população no meio do período

$$P = \frac{\text{Número de indivíduos manifestando a doença no período do estudo}}{\text{População em risco}}$$

ESTUDOS TRANSVERSAIS

- Entre 2013-2014, quase um quinto das crianças americanas com idade acima de 5 anos eram obesas
- 35% (~7.4 milhões) de nascimentos no país X não eram desejados ou planejados
 - (2002 National Survey of Family Growth, Series 23, No. 25, Table 21)
- Outros exemplos...

ESTUDOS TRANSVERSAIS

- Informação sobre incidência não disponível
- Pode-se reconstruir incidência de informação histórica:
 - Exemplo: a incidência da proporção de desistência do tabagismo, denominada "razão de desistência" (*"quit ratio"*)
 - ex-tabagistas / nunca tabagistas
 - é calculado pelos dados de um estudo tipo *survey*

ESTUDOS TRANSVERSAIS

- **Vantagens**
- Em geral, simples, rápidos e de baixo custo
- Pouca dependência da memória do entrevistado
- Não há seguimento

ESTUDOS TRANSVERSAIS

- **Desvantagens**
- Não permitem estabelecer relação temporal entre exposição e efeito
- Doentes com evolução rápida, cura ou morte
- Pouco úteis se o evento é raro °
- Participação baixa
 - vies de seleção

ESTUDOS TRANSVERSAIS
EXEMPLOS



Detail: Brain Stim. 2014 May 1;284:17-26. doi: 10.1016/j.brain.2014.01.041. Epub 2014 Feb 6.
Impairments in motor-cortical inhibitory networks across recent-onset and chronic schizophrenia: a cross-sectional TMS Study.
Strube, M¹, Wolosch, T², Burske, T³, Dahn, U⁴, Exubera, E⁵, Madsen, B⁶, Ekel, E⁷, Lohmann, A⁸.

Abstract
Transcranial magnetic stimulation is an established method to probe inhibitory and facilitatory networks within the human motor cortex. Reduced motor-cortical inhibition is a common finding in schizophrenia patients. Based on neurophysiological findings, the reduced cortical inhibition in schizophrenia has been linked mostly to alterations in GABAergic neurotransmission. The aim of this study was to investigate the impact of disease state on intracortical inhibitory and facilitatory networks measured by TMS in schizophrenia. Cortical excitability was investigated in a pooled cross-sectional sample of recent-onset schizophrenia (RO-SZ), chronically ill schizophrenia patients (CH-SZ) and healthy controls (HC) using single- and paired-pulse TMS applied to the left primary motor cortex. The sample included 41 RO-SZ, 42 CH-SZ and 59 HC. Analyses were focused on resting motor threshold (RMT), short-interval intracortical inhibition (SICI), intracortical facilitation (ICF) and cortical silent period (CSP). There was a significant difference regarding the mean CSP durations across our three study groups ($p=0.002$). Subgroup comparisons revealed a shorter CSP in HC compared to RO-SZ ($p=0.003$). Three group comparisons of SICI ($p=0.066$) and ICF ($p=0.070$) showed differences at a trend level. An overall comparison between HC and all patients showed a significantly reduced SICI ($p=0.031$) and prolonged CSP ($p<0.003$) in schizophrenia patients. This is the largest and first cross-sectional investigation of various excitability parameters in schizophrenia patients. These findings indicate general alterations of cortical inhibition, with differences between recent-onset and chronically ill schizophrenia patients.

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ESTUDOS TRANSVERSAIS COORTE

Epidemiology, 2006, May;16(3):366-9.

The cross-sectional cohort study: an underutilized design.

Hollen AJ, Paine HG, A. Ghori SA

Author information

Abstract

Epidemiologists frequently study the experience of a population over time to estimate the association between exposure and outcome. These studies generally use case-control, prospective cohort, or retrospective cohort designs. The "cross-sectional cohort study," as it is termed here, represents an alternative to these standard methods. With this design, an investigator samples a source population cross-sectionally and then retrospectively assesses subjects' histories of exposures and outcomes over a specified time period. Certain threats to validity, such as nonresponse, exiting, and measurement error from retrospective assessments, must be considered carefully when using this design. However, in some situations, the cross-sectional cohort design may offer advantages over traditional designs, especially in studies in which there is a long interval between exposure and outcomes, in which exposures and outcomes can be accurately assessed retrospectively, and in which the outcome does not accelerate any exiting from the population. Such situations often arise when studying chronic or episodic conditions with low mortality, such as psychiatric disorders.

Stated differently, the cross-sectional cohort study is a retrospective cohort study with all exposure and outcome information collected retrospectively, and with an unknown amount of loss to follow-up. When considered along with its

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ESTUDOS TRANSVERSAIS COORTE

FIGURE 1. Illustration of relationship between study cohort and conceptual cohort. The figure illustrates 12 subjects from a hypothetical conceptual cohort, representing all of the individuals from a larger source population who entered the period of risk for an outcome between calendar time t_0 and calendar time t_1 . The end of the period of observation, t_2 , is 2003, which represents the date at which cross-sectional sampling is performed to obtain the study cohort. Vertical bars represent the time of onset of the period of risk for subjects in the conceptual cohort. Squares represent the time of onset of the outcome. Horizontal lines represent the elapsed time under observation after the onset of the period of risk, lines that do not extend to 2003 indicate exiting from the conceptual cohort. The study cohort consists of all subjects under observation at t_1 (individuals 1, 2, 4, 5, 7, 10, 11, and 12, all shown as full-time lines), or it could consist of a random sample of these individuals. The conceptual cohort consists of all individuals under observation at any point (individuals 1-12). Individuals 3, 6, 8, and 9, shown as half-time lines, exited prior to t_1 , and thus are included in the conceptual cohort but not the study cohort.

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Stats. 2014 Mar;17(3):1-10. doi: 10.1002/sta.1001. Epub 2014 Jan 29.

X-linked adrenoleukodystrophy in women: a cross-sectional cohort study.

Engelert M¹, Baetsens M¹, Dijkstra M¹, Schijf B¹, de Bie RM¹, Vanherroen G¹, Dekaban AS¹, Aubourg P¹, Wanders RJ¹, van Geel BBA¹, de Vries M¹, Poll-The BT¹, Kemp S¹

X-linked adrenoleukodystrophy is the most common peroxisomal disorder. The disease is caused by mutations in the ABCD1 gene that encodes the peroxisomal transporter of very long-chain fatty acids. A defect in the ABCD1 protein results in elevated levels of very long-chain fatty acids in plasma and tissues. The clinical spectrum in males with X-linked adrenoleukodystrophy has been well described and ranges from isolated adrenocortical insufficiency and slowly progressive myelopathy to devastating cerebral demyelination. As in many X-linked diseases, it was assumed that female carriers remain asymptomatic and only a few studies addressed the phenotype of X-linked adrenoleukodystrophy carriers. These studies, however, provided no information on the prevalence of neurological symptoms in the entire population of X-linked adrenoleukodystrophy carriers, since data were acquired in small groups and may be biased towards women with symptoms. Our primary goal was to investigate the symptoms and their frequency in X-linked adrenoleukodystrophy carriers. The secondary goal was to determine if the X-inactivation pattern of the ABCD1 gene was associated with symptomatic status. We included 46 X-linked adrenoleukodystrophy carriers in a prospective cross-sectional cohort study. Our data show that X-linked adrenoleukodystrophy carriers develop signs and symptoms of myelopathy (25/46, 63%) and/or peripheral neuropathy (26/46, 57%). Especially striking was the occurrence of faecal incontinence (13/46, 28%). The frequency of symptomatic women increased sharply with age (from 18% in women <40 years to 88% in women >40 years of age). Virtually all (44/46, 96%) X-linked adrenoleukodystrophy carriers had increased very long-chain fatty acids in plasma and/or fibroblasts, and/or decreased very long-chain fatty acids beta-oxidation in fibroblasts. We did not find an association between the X-inactivation pattern and symptomatic status. We conclude that X-linked

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Stats. 2014 Mar;17(3):1-10. doi: 10.1002/sta.1001. Epub 2014 Jan 29.

X-linked adrenoleukodystrophy in women: a cross-sectional cohort study.

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Research population

We designed a prospective cross-sectional cohort study. Female carriers over the age of 18 years were eligible to participate. They were recruited from the outpatient clinics of the Academic Medical Centre and the Medical Centre Alkmaar from 2008-10. To prevent bias for symptomatic women, we tried to examine all female relatives with X-linked adrenoleukodystrophy of the women participating. Through the Dutch X-linked adrenoleukodystrophy patient organization, letters to invite X-linked adrenoleukodystrophy carriers to participate were sent to all members. The study protocol was approved by the local Institutional Review Board. After informed consent was obtained, women visited the outpatient clinic for assessment, which included questionnaires, neurological examination, neurophysiological tests, blood samples and skin biopsy.

DÚVIDAS?



CUIDADO AO ESCREVER!

In a Copenhagen airline ticket office:

"We take your bags and send them in all directions."

CUIDADO AO ESCREVER!

In a Norwegian cocktail lounge:

"Ladies are requested not to have children in the bar."

CUIDADO AO ESCREVER!

Rome laundry:

"Ladies, leave your clothes here and spend the afternoon having a good time."
